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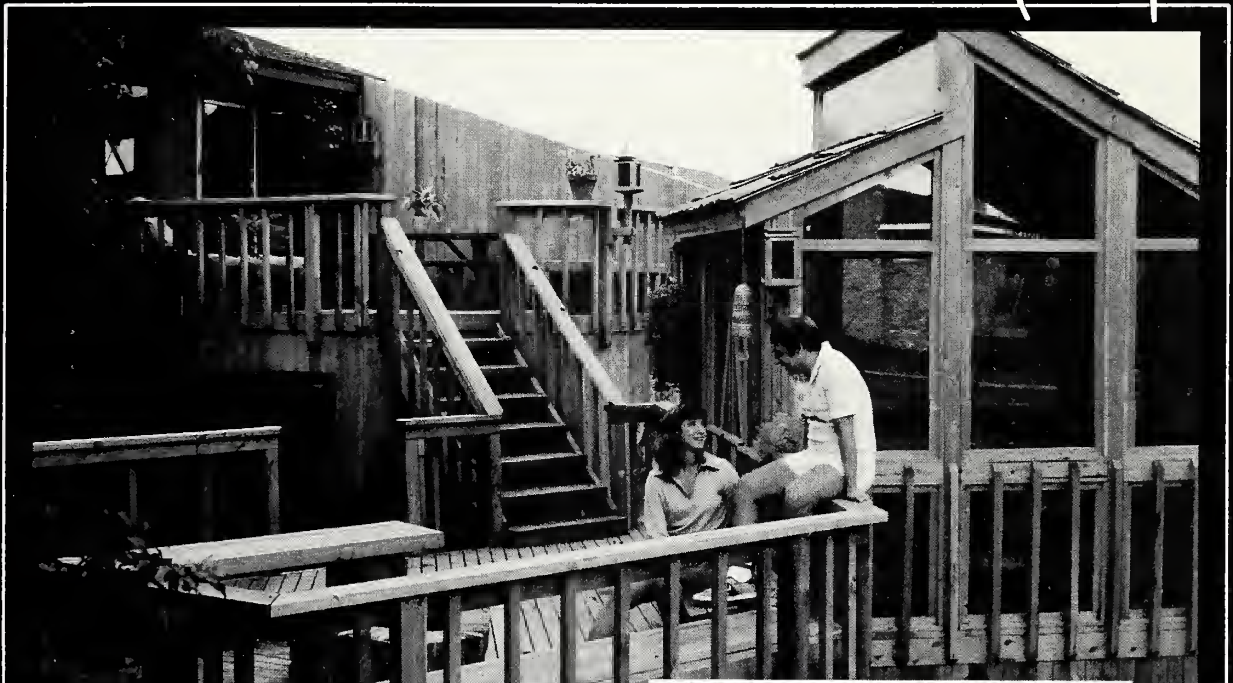

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Arizona Medicine (ISSN 0004-1556) is the official monthly publication of the Arizona Medical Association (810 W. Bethany Home Rd., Phoenix, AZ 85013) and the Medical Society of the United States and Mexico. Subscription price $20.00 per year. $2.00 single copy. Second-class postage paid at Phoenix, Arizona and at additional mailing offices. POSTMASTER: Send address changes to *Arizona Medicine* 810 W. Bethany Home Rd., Phoenix, AZ 85013.

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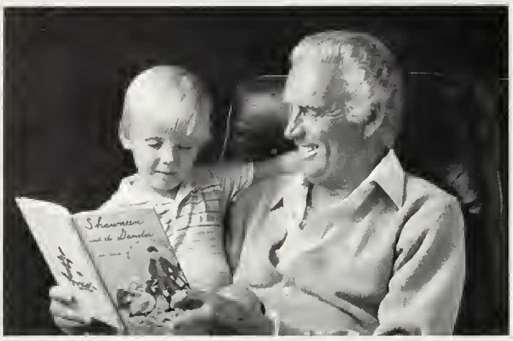

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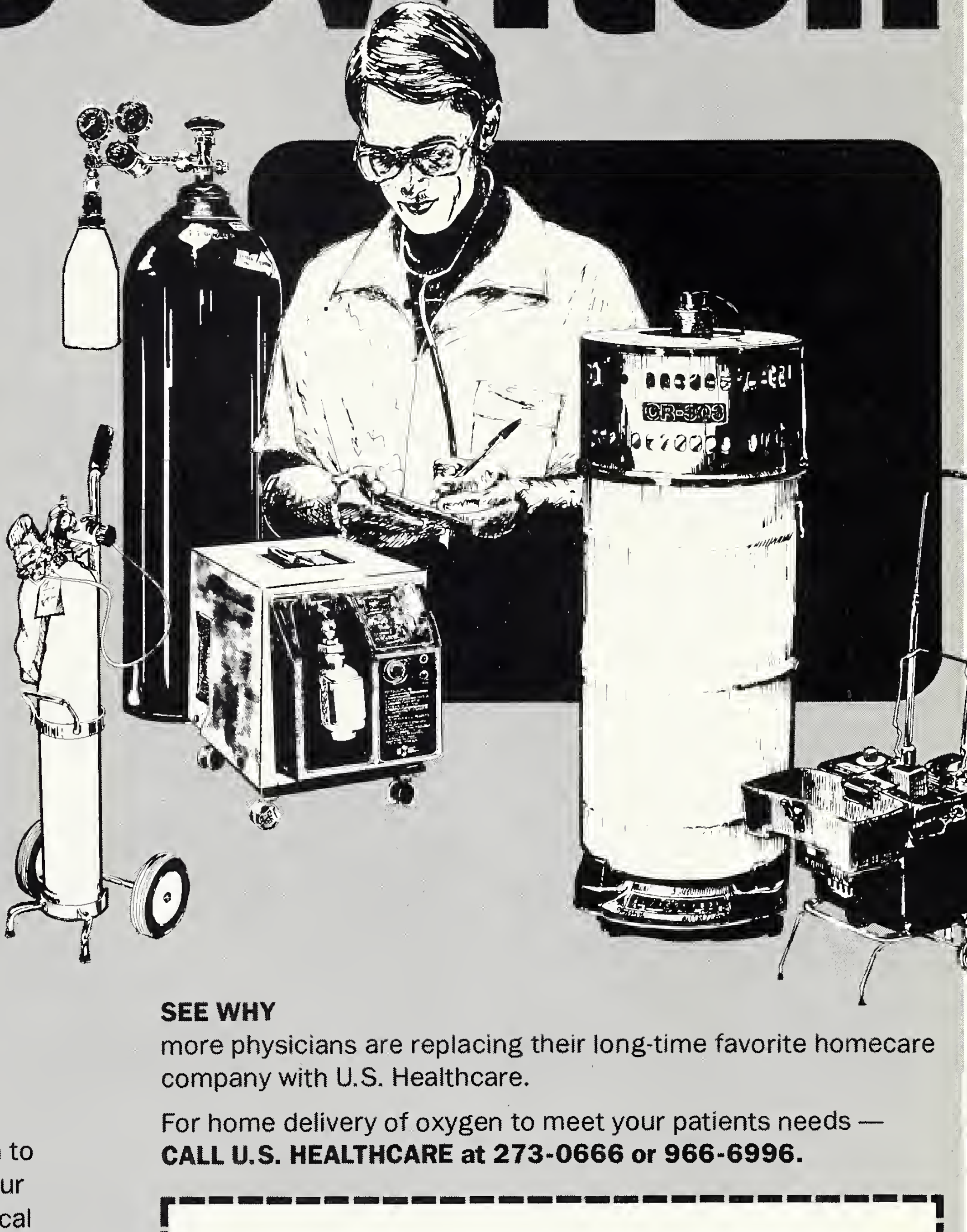

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Cardiology

Successful Coronary Artery Bypass Surgery in the Elderly

Robert B. Mammana, M.D.
imothy Icenogle, M.D.
ack G. Copeland, M.D.
ames F. Fuller, M.D.
Karen A. Siroky, R.N.

ditor:
enneth B. Desser, M.D.

Abstract

Eighty-five patients over 65 years of age who nderwent coronary revascularization were reviewed. he indications for surgery were the same as a younger population. The data demonstrated an operative mortality of 1.17% with a perioperative myocardial nfarction rate of 7.1%. Frequent complications were ncountered and were primarily respiratory (67%) and rrhythmic (57%). Neither contributed to mortality. wenty-four months after surgery 73% were symptom ree on no medications while 27% had angina controlled by medical therapy. Two patients died late after operations, for a two-year survival of 96.69%.

We conclude that age is not a contraindication to oronary artery bypass surgery, that surgery can be performed with a low perioperative mortality and nfarction rate and that long-term follow-up for quality of life is similar to that in a younger population ndergoing similar surgery.

Key Words: coronary artery disease, coronary artery bypass, elderly.

---

rom: The Department of Surgery of the University of Arizona Health ciences Center, Tucson, Arizona. Reprint requests to Robert B. Mammana, M.D., Department of Surgery, Section of Cardiovascular nd Thoracic Surgery, University of Arizona Health Sciences Center, ucson, Arizona 85724.

Introduction

Advanced age has been associated with increased morbidity and mortality in patients undergoing coronary bypass surgery.[1-6] As a result the elderly patient with severe ischemic heart disease is only considered for coronary revascularization while elective surgery is discouraged.

With the advances in surgical technique, myocardial preservation, and postoperative care, surgery has become much safer, even for the elderly. This report details the surgical results and complications of coronary artery bypass surgery in patients over 65 years of age.

Methods

The charts of all patients over 65 years of age who have undergone coronary revascularization at the University of Arizona Health Sciences Center from July 1977 to March 1981 were reviewed. Any patient who had an additional procedure, i.e., valve replacement or carotid endarterectomy, was excluded from the study.

Eighty-five patients were finally selected for review of hospital charts, operative reports, and clinic records. Follow-up was accomplished by personal or telephone interview and was completed in 80 of 84 (95%) of survivors.

The coronary artery bypass procedure for all patients was the same and is as follows: Cardiopulmonary bypass was accomplished using aortic and right atrial cannulation, nonpulsatile perfusion at 40 cc/kg/min, and a standard disposable bubble oxygenator with heat exchanger (Harvey 1000—Wm. Harvey Company, Anaheim, California). All procedures were done under moderate systemic hypothermia (29°C) with cardiac arrest using hypothermia hyperkalemic (28 meq/L) cardioplegia (single bolus) and continuous delivery of topical saline at 4°C into the pericardial well. All distal coronary anastamoses were performed during cardioplegic cardiac arrest using 6-0 proline monofilament suture. All proximal anastamoses were performed after the distal anastamoses were completed using 5-0 proline monofilament suture. Magnification was optional and used at the surgeons' discretion.

All coronary arteries were sized at surgery and an attempt to quantify flow (electromagnetic flow meter) was recorded. If an artery was found to be unsuitable by flow measurement or "stripping" it was categorized as an incomplete revascularization. Statistical analysis was performed using Student's test.

Results

There were 71 males and 14 females. Mean age range was 69.4 ± 3.4 years (65-80 years).

Indications for Surgery

The indications for surgery were unstable angina in 41 (48.2%), chronic stable angina in 37 (43.5%), previous myocardial infarction in six (7%) and preinfarction angina in one. Sixteen patients (19%) had left main coronary disease, 38 (45%) triple vessel disease, 27 (32%) double vessel disease and four (5%) had single vessel disease. The mean ejection fraction was 57.5% ± 16.5% (range 23%-84%).

Intraoperative Measurements

Intraoperative flow rates were performed in 77 of the 85 patients. Flow meter malfunction precluded this procedure in eight patients. Sixty-nine of 77 (89.6%) patients were felt to be satisfactorily revascularized while eight patients (10.4%), were felt to be incompletely revascularized. Inability to construct a bypass because of vessel inadequacy was the cause of incomplete revascularization in four patients while inadequate flow (< 20cc/min) was the cause in the other four. None of the incompletely revascularized patients had a perioperative myocardial infarction. The mean number of bypasses performed was 3.14 ± 0.86 which was 98% predicted by preoperative assessment. Mean ischemic time was 48.2 ± 16.4 min (range 13-80 min) and mean cardiopulmonary bypass time was 91.5 ± 31.1 min (range 28-243 min).

Operative Complications

There was one operative mortality (1.17%). Perioperative myocardial infarction documented by serial EKG's, myocardial enzymes or pyrophosphate scan occurred in six patients (7.1%). The sole mortality was included in this group as we presumed that he had had an intraoperative myocardial infarction. Twenty-two patients (25.8%) required ionotropic support in the early postoperative period. Two of these patients (10%) had perioperative infarctions without mortality. Four patients (4.7%) required intraaortic balloon support postoperatively (all were placed preoperatively), none sustained an infarction. Three patients (3.5%) were returned to surgery because of excess bleeding. No complications relating to reexploration were found.

Postoperative Complications

Complications were frequent and found in 81 patients (96%). They can be broadly categorized as:

a) Respiratory: Respiratory complications occurred in 57 patients (67%). Thirty-nine patients had clinical and radiographic evidence of segmental, subsegmental or labor atelectasis. Fifteen patients developed pleural effusion, although none required thoracentesis or tub drainage. Seven patients developed bacteria pneumonia, three of whom required prolonge intubation. One patient developed adult respirator distress syndrome. All pulmonary complication resolved and added no significant postoperativ hospitalization.

b) Dysrhythmic: Postoperative rhythm disturbance were present in 48 patients (57%). Atrial fibrillation wa the most common and occurred in 18 patients (21%) Premature ventricular contractions requiring dru therapy were present in 17 patients (20%). Othe arrhythmias including supraventricular tachycardia severe sinus bradycardia and sinoatrial block occurre in six patients (7.0%). Medical therapy was successful i all but three patients who required electrica cardioversion.

Miscellaneous Complications

Six patients had nonpulmonary infectious com plications, three were urinary tract in origin, three wer respectively cellulitis at an IV site, at a balloon site an incisional.

Three episodes of acute tubular necrosis occurred None required dialysis and all resolved without residual

Two patients had cerebrovascular accidents a surgery, and both recovered without residual.

There was one episode of pseudomembranous coliti secondary to antibiotic therapy which cleared wit cessation of the drugs.

Follow-up

Eighty-four patients (98.8%) were discharged from th hospital. Follow-up was obtained on 80 (95%) of th survivors for a mean of 26.6 + 10.9 months (range 9-4 mo). There were two late deaths; one five months afte surgery from pneumonia and emphysema, and th other at nine months from supraventricular tachycardi and cardiogenic shock. Of the remaining 78 patients, 5 (73%) were free of angina while 21 (27%) ha postoperative angina. Of these, five had angina tha required no medications. Sixteen had angina sever enough to require formal medical therapy. A highe percentage of the patients with postoperative angin had "incomplete revascularization" (14.8%) than th patients who were asymptomatic (8.77%), though thi was not statistically significant. Two patients have ha late postoperative myocardial infarctions; one wa incompletely revascularized. One patient was re admitted for repeat CABG after graft closure and retur of angina. He is now asymptomatic 14 months afte surgery.

Discussion

Until now advanced age has been associated with a increased operative mortality in CABG surgery.[2,7-11] In recent multicenter study,[11] men ages 60 to 69 had nearl three times the operative mortality of men ages 50 to 5 (3.5% vs 1.5%) The operative mortality in men over 7 years was 5.84% in that series. This report documents tha improvements in surgical technique and myocardia reservation result in improved survival for all ages of atients undergoing CABG surgery. Our experience ith one operative mortality in 85 patients reflects the lidity of this concept.

Our patients had more postoperative complications an those reported in other series. Respiratory omplications were found most often in our patients hile dysrhythmias have been usually documented as ost common.[1,5,12,13] This may be a result of our belief at atelectasis represents a complication and ontributes to perioperative morbidity and mortality. espite the high incidence of respiratory complication, e low incidence of morbidity is the result of the outine use of vigorous chest physiotherapy, erosolized bronchodilators and incentive spirometry. erfusion time did not correlate with the presence of spiratory complications.

Angiography revealed approximately 19% of patients ad left main coronary disease, 45% had three vessel sease, 32% had two vessel disease and only 5% had ngle vessel disease. The incidence of left main oronary disease in our series was comparable to that of her series[8,9] while the incidence of single vessel sease was lower than the 10% to 30% incidence ported in other series.[3,8,9,13,14] We conclude that our atient population is similar to that of other reports in omparing severity of disease.

Studies have shown that a mean flow less than 2cc/min is associated with a high rate of early failure[11,15] 2% to 50%) and approximately 63% late failure.[11] Graft ows between 21 and 39cc/min have a 28% to 33% cclusion rate in some studies.[11,15] A recent study owed only a borderline correlation between mean ow less than 40cc/min and graft patency.[16]

Eighty-nine percent of our patients were felt to be tisfactorily revascularized while 10.5% were not. No atistically significant relationship between inadequate evascularization, perioperative myocardial infarction r posthospitalization angina could be established. thers have shown that incomplete revascularization id not affect hospital mortality[9,13] but did affect long-erm survival.[9] Our data concur with the former but either confirm or negate the latter.

Perioperative myocardial infarction was documented six patients (7.1%), one was an operative mortality. hese results are similar to other series of elderly atients where perioperative infarction rates have nged from 7.1% to 9.3%.[2,5,8]

On two-year follow-up 72% of these patients were ymptomatic. This compares favorably with other udies where asymptomatic postoperative patients omposed 68% to 74% of patients on long-term follow-p.[2,3,17-19]

Myocardial revascularization is accepted as the eatment for angina unresponsive to medical anagement. However, many physicians are reluctant refer the elderly patient with angina for surgery ecause of previously published high operative mortality. Our results confirm that CABG surgery in the elderly is safe, that the operative mortality is the same as that for younger candidates and that while postoperative complications are frequent they can be successfully managed by prompt and aggressive care. Furthermore, the excellent quality of life after surgery should warrant a reevaluation of age as a criteria for surgical exclusion.

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Editorial Comment

Kenneth B. Desser, M.D.

The article by Mammana et al. indicates that coronary bypass surgery can be performed in the 65 to 80 year-old age group with a survival rate comparable with that in younger subjects. Clearly we must revise our definition of "elderly." It is well recognized that as physicians age their lower limits for the designation "old" increases. Definitions aside, the standard problems relating to indications for surgery remain. Almost one-half of the study group underwent bypass surgery because of unstable angina pectoris. Prospective studies suggest that the mortality rate associated with this entity is similar for surgical and medical therapy. It should be noted that those undergoing operation have a significantly lower incidence of angina pectoris after hospital discharge. Subjects with left main coronary artery disease (19% in this study) are treated as a different group. Virtually every study performed on the subject demonstrates that bypass surgery in this group has a strong influence on survival. It is difficult to determine which patient with unstable angina pectoris will have this dangerous lesion and its relatively high prevalence in several investigative series is disturbing. Hence, the rational for coronary arteriography in the unstable angina group is provided.

Mammana et al. are to be commended for their excellent results and inclusion of segmental atelectasis as a complication. Cardiologists are so familiar with this finding in postoperative cardiac surgery patients that they tend to consider this finding as a "non-complication." Finally, it is unclear whether a perioperative myocardial infarction rate of 7% really represents a complication since it approximates the percentage of completed infarcts in hospitalized angina pectoris patients who are treated medically.

Supported by the Biomedical Research Memorial Fund, Inc.

Tuberculosis Skin Testing Programs in Maricopa County

Pearl M. Tang, M.D.

Editor:
Barry A. Friedman

Tuberculosis has been a major health problem i Arizona for many years. In 1972, a report on Arizona' health problems cited the state's tuberculosis case rate to be consistently higher than that of the United States a a whole.[1] In Maricopa County, tuberculosis skin testin became a routine preventive test in Well Baby Clinics i 1960 when a study revealed 25 cases of tuberculosi meningitis in children during a period when only 1 adult cases of tuberculosis were reported.[2]

Tuberculosis skin testing has been conducted i Maricopa County schools prior to 1960 as an educationa tool and an effort at tuberculosis case finding. Ski testing was generally conducted on children enterin kindergarten and first grade.

From: Maricopa County Department of Health Services, Bureau Maternal and Child Health. Reprint request to Pearl M. Tang, M.D 6002 North 45th Street, Scottsdale, Arizona 85253.

In 1965, with the initiation of Headstart, preschool hildren in Headstart centers were routinely screened ith skin tests. Positive reactors and family contacts eceived diagnostic follow-up and treatment. (Table 1)

As control of the disease in Maricopa County nproved, the number of new reported cases of uberculosis decreased. There was observed a gradual ecline of the positive reactor rate in the School Skin esting Program. The overall county rate of 0.47% in 967-1968 school year, dropped to 0.36% in 1973-1974 chool year. (Tables 2 and 3.) Of particular interest was ne sharp decline of the reactor rate from 1.1% in 1967-968, to 0.0% in 1973-1974 in schools located in a one quare mile area of inner city, where the demonstration roject for comprehensive care for children and youth as implemented in 1968. In this area, routine uberculosis skin testing was conducted on all infants nd children receiving preventive care. This program of arly detection of the tuberculosis contact, with the rompt initiation of preventive chemotherapy, ighlights the value of continuing comprehensive ediatric care.[3]

However, there remained areas in the county where chools show a consistently high rate of positive reactors ustifying the need for continuing skin testing in these istricts.

Beginning in 1973-1974 school year, a selective rogram of skin testing was conducted in areas onsidered at high risk. Annually, schools were selected n the basis of previous positive reactor rates and the istribution of newly reported cases of tuberculosis in ne area. Testing was conducted on new enrollees ntering kindergarten, first grade and other grades.

As programs of preventive child health care including uberculosis skin testing expanded in the county, there as a decrease in the incidence of new reactors entering indergarten or first grade. However, the incidence of eactors among new school enterers in the older age roups did not decrease.

A 1979 report mentioned tuberculosis was increasing n Maricopa County and Arizona, while the national ncidence was decreasing.[4] In Maricopa County the ncrease of new active cases was noted among those nder age 60 years, suggesting a change in pidemiology, and a need to focus case finding among he young. (Table 4)

The tuberculosis skin test conversion rate is known to ncrease rapidly after the age of ten years, and primary nfections occurring after age seven years are more ikely to be followed by chronic pulmonary uberculosis.[5] It was felt that detection of the adolescent eactor, and institution of chemoprophylaxis can hange the rising trend of tuberculosis in the county. hus, since 1978, in selected schools, all children in the ighth grade were routinely tested, in addition to testing f new enterers in other grades.

Results of skin testing programs during 1979-1980, 980-1981 and 1981-1982 school years, confirmed the

Table 1
Head Start Program
Tuberculin Skin Test Reactors
1969-1981

Year	Number Tested and Read	Total Rate	Maricopa County Program	City of Phoenix Program
1969-1970	1,915	0.41%	0.4%	0.4%
1970-1971	1,832	0.3%	0.2%	0.4%
1971-1972	1,182	0.6%	1.2%	0.1%
1972-1973	1,273	0.6%	1.2%	0.0%
1973-1974	893	0.3%	0.0%	0.5%
1974-1975	870	0.0%	0.0%	0.0%
1975-1976	962	0.6%	0.4%	0.6%
1976-1977	1,002	0.6%	0.7%	0.6%
1977-1978	1.020	1.8%	1.0%	2.1%
1978-1979	1,318	1.4%*	0.1%	1.6%
1979-1980	1,381	0.7%	0.0%	1.0%
1980-1981	1,347	0.9%	0.5%	1.1%

** The national average rate for children of comparable age should be less than 0.2%. (USPHS—June 1979)*

Table 2
Bureau of Maternal and Child Health
Maricopa County School Skin Testing Program
Average Rate of TB Reactors in School Program
(Kindergarten and 1st Grade)

Year	Average Rate for all Schools
1967-1968	0.47%
1968-1969	0.19%
1969-1970	0.13%
1970-1971	0.24%
1971-1972	0.40%
1972-1973	0.22%
1973-1974	0.36%
Five year average (1967-1972)	0.29%

Table 3
Chidlren and Youth Project

	TB Reactor Rate
Phoenix Elementary #1 District 1967-1968	1.10%
Phoenix Elementary #1 District 1973-1974	0.0%

Phoenix Elementary #1 District contained a high risk area of schools with highest reactor rate in county. In this high risk area, the Health Department initiated the "Comprehesive Care Project for Children and Youth" in 1968. Children received continuing comprehensive preventive and therapeutic care in the high risk area of the district.

A progressive decline in the incidence of reactors among new school enterers in the area was observed.

value of this selective testing. In 1979-1980 school year the overall incidence in selected schools was 1.2%. In 1980-1981 school year the overall incidence was 2.3%. In 1981-1982 school year the overall incidence of positive reactors was 3.8% among the schools selected for testing. Such figures are excessively high for children of elementary school age. (Table 5)

In the past ten years, there has been a change in the areas with high positive tuberculosis reactor rates. Prior to 1970, the high incidence of positive reactors was more likely to be found in the inner city and in the rural areas, where many children were from migrant farm labor families. With the advent of mechanization, and the decrease of migrant farm labor, positive reactors are not as prevalent in rural schools. However, in the crowded urban areas of the inner city, we continue to find the high percentage of positive reactors. These are the areas of concentration of poor with inadequate housing, inadequate nutrition and in need of health care. The experience in Maricopa County is similar to that of other urban communities which observe an apparent resurgence of tuberculosis in urban children.[6]

All positive reactors and their families are referred for diagnostic evaluation and follow-up treatment. Such a program is cost effective, since preventive treatment is estimated at less than $15.00 per child, in contrast to at least $375.00-$800.00 per year for chemotherapy of adult tuberculosis. In addition, the adult who is unable to earn a living must often fall upon community resources for family assistance.

Summary

Tuberculosis has been a major health problem in Arizona for many years.

In Maricopa County, tuberculosis skin testing has been routinely conducted in public schools since prior to 1960. Testing was conducted on children first entering school (kindergarten or first grade).

Routine skin testing was adopted in county health department preventive pediatric care programs in 1960, and extended to preschool and Headstart programs after 1965.

As county tuberculosis control measures improved, the incidence of new cases decreased, and a decline in school reactor rates was observed.

In 1973, a program of selective testing in high risk areas was implemented for cost efficiency. All new enrollees in all grades were tested.

In 1978, selective testing was further modified to detect the adolescent convertor by routine screening of all children in eighth grade, in addition to new enrollees in all grades in selected schools. Postive reactors are now more often found among children in crowded urban areas.

Results of the modified program justified the value of selective skin testing programs. The detection and preventive therapy of the adolescent convertor may change the rising trend of tuberculosis in the county.

Table 4
Bureau of Maternal and Child Health
Maricopa County Department of Health Services
Maricopa County TB Cases by Age—1977-1978

	1977		**1978**	
Age	**#**	**%**	**#**	**%**
0-9	3	1.8	11	6.0
10-19	1	0.6	2	1.1
20-29	14	8.4	19	10.4
30-39	15	9.0	19	10.4
40-49	28	16.9	31	16.9
50-59	41	24.7	43	23.5
60+	63	38.0	58	31.7
Unknown	1	0.6	0	0.0
Total	166	100.0	183	100.0

Table 5
Bureau of Maternal and Child Health
Maricopa County Department of Health Services
Selective TB Skin Testing in Elementary Schools

Year	**Grades**	**Number Tested**	**Reactor Rate**
1973-1974	New enterers All grades	10,488	0.74%
1974-1975	New enterers All grades	583	2.1%
1975-1976	New enterers All grades	328	3.4%
1976-1977	New enterers All grades	1,045	1.1%
1977-1978	New enterers All grades	814	1.0%
1978-1979	New enterers and All 8th grade	1,371	1.8%
1979-1980	New enterers and All 8th grade	3,747	1.2%
1980-1981	New enterers and All 8th grade	2,520	2.3%
1981-1982	New enterers and All 8th grade	1,354	3.8%

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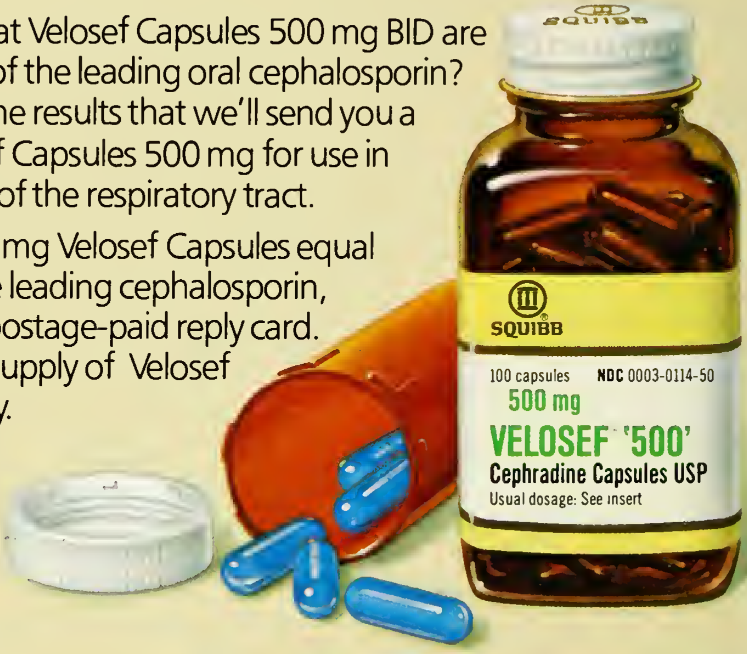

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INDICATIONS AND USAGE: These preparations are indicated for the treatment of infections caused by susceptible strains of designated microorganisms as follows: Respiratory Tract Infections (e.g., tonsillitis, pharyngitis, and lobar pneumonia) due to *S. pneumoniae* (formerly *D. pneumoniae)* and group A beta-hemolytic streptococci [penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever; Velosef (Cephradine, Squibb) is generally effective in the eradication of streptococci from the nasopharynx; substantial data establishing the efficacy of Velosef in the subsequent prevention of rheumatic fever are not available at present]; Otitis Media due to group A beta-hemolytic streptococci, *H. influenzae,* staphylococci, and *S. pneumoniae;* Skin and Skin Structures Infections due to staphylococci and beta-hemolytic streptococci; Urinary Tract Infections, including prostatitis, due to *E. coli, P. mirabilis, Klebsiella* species, and enterococci *(S. faecalis).*

Note: Culture and susceptibility tests should be initiated prior to and during therapy.

CONTRAINDICATIONS: In patients with known hypersensitivity to the cephalosporin group of antibiotics.

WARNINGS: *Use cephalosporin derivatives with great caution in penicillin-sensitive patients since there is clinical and laboratory evidence of partial cross-allergenicity of the two groups of antibiotics; there are instances of reactions to both drug classes (including anaphylaxis after parenteral use).* In persons who have demonstrated some form of allergy, particularly to drugs, use antibiotics, including cephradine, cautiously and only when absolutely necessary.

Pseudomembranous colitis has been reported with the use of cephalosporins (and other broad spectrum antibiotics); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with antibiotic use. Treatment with broad spectrum antibiotics alters normal flora of the colon and may permit overgrowth of clostridia. Studies indicate a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis. Cholestyramine and colestipol resins have been shown to bind the toxin *in vitro.* Mild cases of colitis may respond to drug discontinuance alone. Manage moderate to severe cases with fluid, electrolyte and protein supplementation as indicated. Oral vancomycin is the treatment of choice for antibiotic-associated pseudomembranous colitis

produced by *C. difficile* when the colitis is severe or is not relieved by drug discontinuance; consider other causes of colitis.

PRECAUTIONS: General: Follow patients carefully to detect any side effects or unusual manifestations of drug idiosyncrasy. If a hypersensitivity reaction occurs, discontinue the drug and treat the patient with the usual agents, e.g., pressor amines, antihistamines, or corticosteroids. Administer cephradine with caution in the presence of markedly impaired renal function. In patients with known or suspected renal impairment, make careful clinical observation and appropriate laboratory studies prior to and during therapy as cephradine accumulates in the serum and tissues. See package insert for information on treatment of patients with impaired renal function. Prescribe cephradine with caution in individuals with a history of gastrointestinal disease, particularly colitis. Prolonged use of antibiotics may promote the overgrowth of nonsusceptible organisms. Take appropriate measures should superinfection occur during therapy. Indicated surgical procedures should be performed in conjunction with antibiotic therapy.

Information for Patients: Caution diabetic patients that false results may occur with urine glucose tests (see PRECAUTIONS, Drug/Laboratory Test Interactions). Advise the patient to comply with the full course of therapy even if he begins to feel better and to take a missed dose as soon as possible. Tell the patient he may take this medication with food or milk since G.I. upset may be a factor in compliance with the dosage regimen. The patient should report current use of any medicines and should be cautioned not to take other medications unless the physician knows and approves of their use (see PRECAUTIONS, Drug Interactions).

Laboratory Tests: In patients with known or suspected renal impairment, it is advisable to monitor renal function.

Drug Interactions: When administered concurrently, the following drugs may interact with cephalosporins:

Other antibacterial agents — Bacteriostats may interfere with the bactericidal action of cephalosporins in acute infection; other agents, e.g., aminoglycosides, colistin, polymyxins, vancomycin, may increase the possibility of nephrotoxicity.

Diuretics (potent "loop diuretics," e.g., furosemide and ethacrynic acid) — Enhanced possibility for renal toxicity.

Probenecid — Increased and prolonged blood levels of cephalosporins, resulting in increased risk of nephrotoxicity.

Drug/Laboratory Test Interactions: After treatment with cephradine, a false-positive reaction for glucose in the urine may occur with Benedict's solution, Fehling's solution, or with Clinitest® tablets, but not with enzyme-based tests such as Clinistix® and Tes-Tape®. False-positive Coombs test results may occur in newborns whose mothers received a cephalosporin prior to delivery. Cephalosporins have been reported to cause false-positive reactions in tests for urinary proteins which use sulfosalicylic acid, false elevations of urinary 17-ketosteroid values, and prolonged prothrombin times.

Carcinogenesis, Mutagenesis: Long-term studies in animals have not been performed to evaluate carcinogenic potential or mutagenesis.

Pregnancy: Teratogenic Effects/Impairment of Fertility — Category B: Reproduction studies have been performed in mice and rats at doses up to 4 times the maximum indicated human dose and have revealed no evidence of impaired fertility or harm to the fetus due to cephradine. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

Nursing Mothers: Since cephradine is excreted in breast milk during lactation, exercise caution when administering cephradine to a nursing woman.

Pediatric Use: Adequate information is unavailable on the efficacy of b.i.d. regimens in children under nine months of age.

ADVERSE REACTIONS: Untoward reactions are limited essentially to G.I. disturbances and, on occasion, to hypersensitivity phenomena. The latter are more likely to occur in persons who have previously demonstrated hypersensitivity and those with a history of allergy, asthma, hay fever, or urticaria.

(continued on next page)

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(continued)

The following adverse reactions have been reported following use of cephradine: G.I. — Symptoms of pseudomembranous colitis can appear during antibiotic therapy; nausea and vomiting have been reported rarely. Skin and Hypersensitivity Reactions — mild urticaria or skin rash, pruritus, joint pains. Blood — mild transient eosinophilia, leukopenia and neutropenia. Liver — transient mild rise of SGOT, SGPT, and total bilirubin with no evidence of hepatocellular damage. Renal — transitory rises in BUN have been observed in some patients treated with cephalosporins; their frequency increases in patients over 50 years old. In adults for whom serum creatinine determinations were performed, the rise in BUN was not accompanied by a rise in serum creatinine. Others — dizziness, tightness in the chest, and candidal vaginitis.

DOSAGE: Adults — For respiratory tract infections (other than lobar pneumonia) and skin and skin structures infections: 250 mg q. 6 h or 500 mg q. 12 h. For lobar pneumonia: 500 mg q. 6 h or 1 g q. 12 h. For uncomplicated urinary tract infections: 500 mg q. 12 h; for more serious UTI, including prostatitis, 500 mg q. 6 h or 1 g q. 12 h. Severe or chronic infections may require larger doses (up to 1 g q. 6 h.).

Children over 9 months of age — 25 to 50 mg/kg/day in equally divided doses q. 6 or 12 h. For otitis media due to *H. influenzae:* 75 to 100 mg/kg/day in equally divided doses q. 6 or 12 h but not to exceed 4 g/day. Dosage for children should not exceed dosage recommended for adults. There are no adequate data available on efficacy of b.i.d. regimens in children under 9 months of age.

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Neurology

ntracranial Pressure onitoring and urgery of Acute raniocerebral Trauma

ewis J. Brown, M.D.

ditors:
arry Hendin, M.D.
ames L. Fry, M.D.
awrence Z. Stern, M.D.

Current management of serious head injuries often volves monitoring of intracranial pressure and surgical emoval of intracranial mass lesions. Utilizing these echniques, morbidity and mortality resulting from ajor head injury can be decreased.[10]

ntracranial Pressure Monitoring

For a number of years neurosurgeons have been nterested in measuring intracranial pressure (ICP) in atients harboring intracranial pathology, including that roduced by trauma. The first attempts at measuring ICP vere made in 1922, but it was not until the early 1960's hat the technique became systematically applied by undberg in Sweden.[1] He monitored ICP with a entricular catheter connected to a transducer and hence to a standard pen and ink recorder. More ecently, with the advent of the electronic-computer ge, pressure is displayed continuously on an scilloscope in association with digital readout. Data can e recorded permanently on a strip chart recorder or emporarily in a data storage processor. Other echniques have been developed for measuring ICP, tilizing the epidural, subdural, or subarachnoid spaces or the location of the intracranial device. These devices include a hollow tube transmitting pressure via a fluid-filled column to a remote physiologic transducer and an implantable unit which utilizes radiotelemetry. Additional options include a percutaneous pneumatic device with a fiberoptic sensor or an implanted transducer with percutaneous electrical leads.[2]

All of these systems measure the level of intracranial pressure in millimeters of mercury. One torr is defined as one millimeter of mercury at sea level and is equivalent to 13.6 millimeters water pressure. Up to 15 torr is considered normal following head trauma. One might expect that the level of ICP is related to the patient's clinical neurological state, i.e., the higher the pressure, the worse the patient. Unfortunately, this is occcasionally not the case after head trauma and a varying neurological deficit may be present without an elevated or changing intracranial pressure pattern. The latter situation usually results from intrinsic changes in the brain and/or brain stem as a result of the primary impact injury, in contrast to deficits produced by the compressive effects of an expanding mass. In the absence of space-taking masses, only about one-third of the patients, even those in coma, will have abnormal ICP, and the levels are usually not more than moderately elevated.[3,4] Conversely, ICP is usually high in patients who have a space-occupying lesion, such as a hematoma or a swollen hemisphere.[3]

Lundberg identified three wave forms, the most clinically significant being the "A" or plateau wave. These are waves reaching a level of 50 to 100 torr and lasting five to twenty minutes. In the conscious patient, they are often accompanied by headache and signs of paroxysmal brain stem dysfunction. Lundberg felt these waves could lead to acute brain stem injury and, therefore, could be regarded as a harbinger of disaster. His observations were initially made on patients harboring intracranial neoplasms, but his theories and techniques were eventually extended to the acutely traumatized patient.

Monitoring is very helpful in managing head injured patients undergoing medical therapy. The use of dehydrating agents and controlled ventilation is more efficaciously applied when the level of ICP is known. One is able to evaluate the effectiveness of such treatment by the response on the ICP, and it is surely mandatory in the treatment of patients on the barbiturate coma regimen. Finally, monitoring following operation can be very helpful in ascertaining satisfactory progress as a rising ICP curve may be the first indication of a developing postoperative complication. Clearly, one should not be led astray and rely on the intracranial pressure level for the total evaluation of the head injured patient. Monitoring represents only one aspect of the management program. Additionally, technical and artifactual problems may alter the reliability of the system. More important information is obtained from the detailed neurological examination, both initially and serially, and the level of consciousness

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rom: 345 East Virginia Avenue, Phoenix, Arizona 85004. Reprint equest: Lewis J. Brown, M.D., 345 East Virginia Avenue, Phoenix, rizona 85004.

as defined by the Glasgow coma scale.

In Phoenix, intracranial pressure monitoring is accomplished either by means of a ventricular catheter or with the Richmond bolt system.[5] A Wilkinson cup catheter has been used postoperatively as well.[6] All three methods utilize hydrostatic means for transmitting pressure to an appropriate transducer. The ventricular catheter and the Richmond bold can be installed at the bedside, avoiding removal to the surgical suite, which is mandatory in the more complex systems. Although the information obtained from either system is comparable, one can drain cerebrospinal fluid via a ventricular catheter and reduce ICP directly, whereas this is patently impossible with any of the extraventricular devices. On the other hand, the Richmond bolt is somewhat easier to install, particularly when the ventricles are small and/or slit-like and are shifted. (Figure 1 and 2). Both systems carry minimal risk of infection if the period of use is limited to three days. Still, monitoring has been carried out for as long as three weeks without infection. Obviously, infection with a ventricular cannula has more ominous overtones than that which occurs with the extraventricular devices. With either system, patients are given prophylactic antibiotics until monitoring is discontinued.

Intracranial Surgery

Surgical therapy in craniocerebral trauma is clearly definable in many situations but less so in others. Surgical lesions are best classfied as extradural or intradural, the latter encompassing subdural and intracerebral locations. Frequently, a mixed picture occurs.

The pure extradural hematoma is the most satisfying traumatic lesion to treat operatively, assuming the diagnosis has been made and treatment instituted before irreparable neurological deterioration has occurred. The classic description of this entity includes the so-called "lucid interval" which follows cranial trauma that usually, but not always, produces loss of consciousness. Soon thereafter awareness lessens, to be followed by stupor and then coma. Major alterations in vital signs occur with a rising blood pressure, slowed pulse and slowed, labored respirations. Transtentorial herniation and brain stem compression lead to pupillary inequality and/or paresis of eye movements with weakness of contralateral extremities. In reality, this "classical" description occurs in a small percentage of patients, usually in the 12 to 15 percent range.[7]

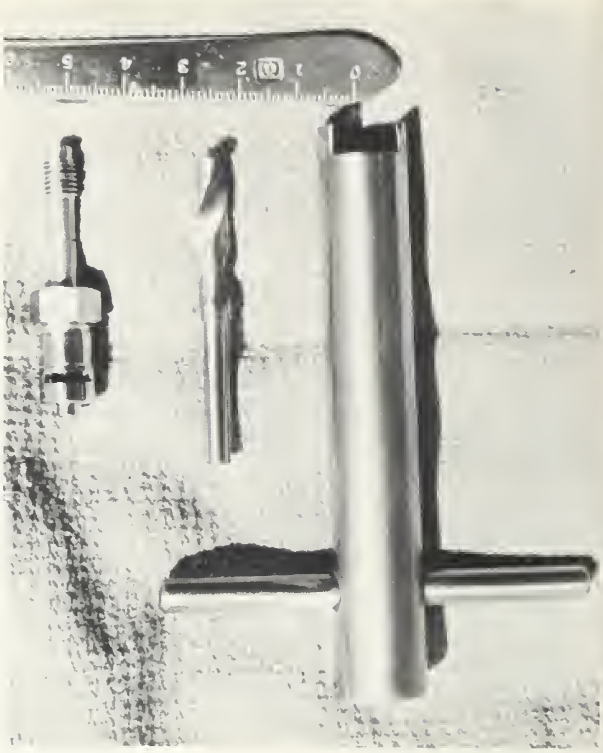

Figure 1
Hollow Richmond bolt, drill bit, and placement handle fo intracranial pressure monitoring (ICP)

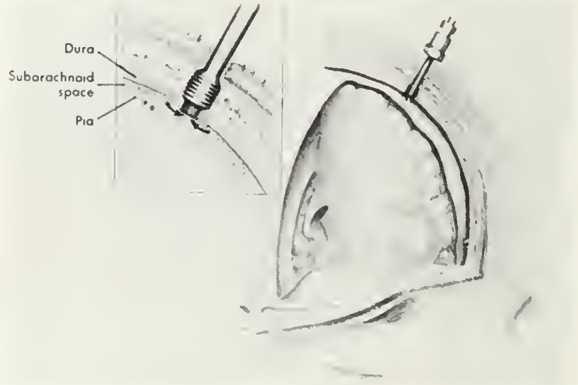

Figure 2
Diagrammatic representation of proper placement of Richmond bolt. (From D. P. Becker, et al.[12] Published with permission.)

There is no clear-cut neurological picture that will distinguish an acute extradural from an intradural hematoma. A high index of suspicion must be maintained in order to prevent an avoidable catastrophe. Some patients are continuously unconscious from the moment of impact, whereas others may awaken and then become somnolent without other associated findings. Fortunately, the remarkable diagnostic accuracy of the computed tomographic scan and its increasing general availability now allow the physician to make an earlier and more accurate diagnosis. (Figure 3).

When injury occurs in an area where scanning is not available, early removal to a hospital that is equipped to handle such an injury is highly advisable. If, because of multiple injuries, the patient's condition is too unstable to allow transfer, neurological function can often be temporarily maintained or improved by the use of hyperventilation and diuretic agents, furosemide and

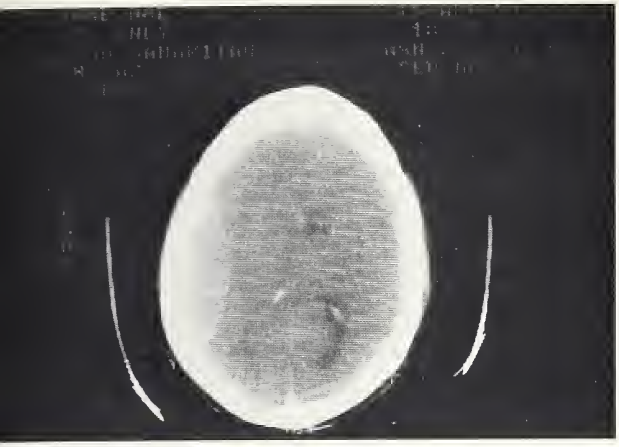

Figure 3

T scan demonstrating typical appearance of large extradural ematoma with ventricular shift.

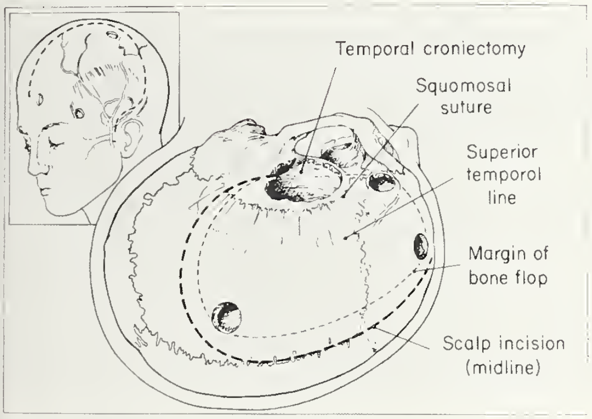

Figure 4

sic large craniotomy for trauma providing exposure and cess to areas most frequently involved in blunt trauma. rom D. P. Becker, et al.[13] Published with permission.)

annitol. Dexamethasone in supramaximal doses is equently added to this treatment regimen despite the ncertainty regarding its efficacy and mode of action in aniocerebral trauma.[8,9]

If neurological deterioration progresses, in the osence of scanning capability, cerebral angiography an provide helpful diagnostic information. As a last esort, acute burr hole exploration may be necessary in atients who are suspected of harboring a surgical mass sion and who have not responded to the medical djuvants listed above. The specific situation will dictate hether this is best done in the emergency room or the perating room. Following stabilization, urgent transfer an appropriate institution should be arranged.

Surgery itself depends to a considerable degree on the ocation of the mass and its size. Because of the naracteristic anatomy of the base of the skull, most ntracranial hematomas are located in the frontal or temporal regions. Therefore, a generous frontotemporal curved scalp incision with an equally large bone flap will allow adequate evacuation of the lesion. (Figures 4 and 5). Often pulped or contused brain parenchyma is present in association with the clot and is removed at the same time. As mentioned earlier, surgical removal of extradural hematomas usually carries an excellent prognosis. The prognosis with intradural lesions is less favorable, but it is becoming increasingly clear that early and extensive evacuation of these lesions can improve the outlook.[10] The survival rate and the quality of survival may be as much a function of the degree of the primary impact injury as it is to the secondary compressive effects of the mass lesion.

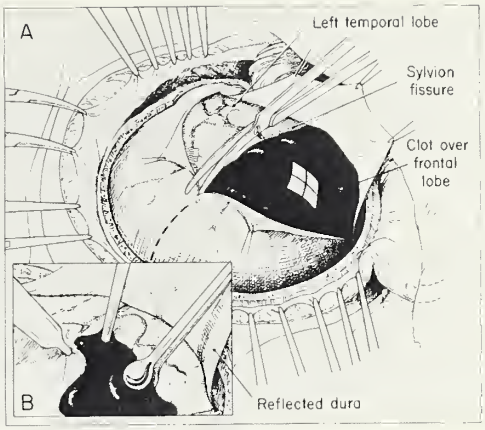

Figure 5

Dural opening of the standard trauma craniotomy with presence of an acute subdural hematoma. Note the wide exposure this provides. (From D.P. Becker, et al. Ibid, Figure 4.)

Posterior fossa hematomas are quite uncommon, comprising only two to three percent of all traumatic hematomas. The diagnosis has been quite difficult to make in the past, prior to the advent of computed scanning. With this remarkable innovation, it is now possible to make the diagnosis in most instances. Surgical evacuation of these lesions requires the performance of a posterior fossa craniectomy.

Open or compounded wounds of the skull and brain obviously require early debridement of all layers with removal of devitalized brain followed by voluminous irrigation of the traumatized areas with saline and antibiotic solutions. Dural closure, either primarily or with the use of a pericranial or fascial graft, should be considered mandatory. Postoperative care should include high doses of antibiotics.

Patients who have a major shift of midline structures and no hematoma (or a minimal one) represent a major therapeutic challenge. They are the most precarious patients in the closed head trauma group. Intensive medical management and monitoring must be started expeditiously. This may include deep barbiturate coma. This technique has come under recent criticism. Its future inclusion in the therapeutic armamentarium in trauma remains somewhat unclear at this time.[11] Infrequently, hemicraniectomy with removal of a massive bone flap and incision of the dural membrane has been utilized to control inexorably increasing intracranial pressure as a "salvage" procedure. The results of this aggressive procedure are varied, but quality survival is occasionally achieved in the face of what appear to be a hopeless situation.

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AM *Oncology*

Chemotherapy of Sarcomas

Thomas D. Kummet, M.D.

Editors:
David S. Alberts, M.D.
Ellen M. Chase, B.S.

Chemotherapy of Sarcomas

Sarcomas, malignant tumors arising from connective tissue, account for less than one percent of adult cancers.[1] There are over 20 different types of soft tissue sarcomas[2] and at least ten different types of bone sarcomas.[1] The determination of the specific histopathologic diagnosis can be exceedingly difficult. A Southwest Oncology Group study which included pathology review resulted in disagreement with the submitted diagnosis in 39% of the cases.[2] The natural history of the various histologic subtypes varies from the relatively benign (epithelioid sarcoma) to the almost universally fatal (mesothelioma). The combination of infrequent occurrence, numerous subtypes, and varying natural history makes the study of the therapy for this group of diseases difficult. Investigations require large

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From: University of Arizona College of Medicine and University o Arizona Cancer Center, 1501 North Campbell Avenue, Tucson Arizona 85724. Dr. Kummet is a Fellow, Section of Hematology/Oncology. Reprint requests to Thomas D. Kummet, M.D. Section of Hematology/Oncology, University of Arizona College o Medicine, 1501 North Campbell Avenue, Tucson, Arizona 85724.

ulti-institutional studies so that the effect of therapy n the many different histologic subtypes can be etermined.

oft Tissue Sarcomas

Despite the great number of subtypes, there is niversal agreement that doxorubicin (adriamycin) is e most active agent for advanced soft tissue sarcomas. /hen used as a single agent, a steep dose response urve is evident. The response rate at 45 mg/m^2 is 20%, hile a dose of 75 mg/m^2 results in a 36% response rate. owever, the median survival is less than one year egardless of dose.[3] Combining doxorubicin with other gents usually improves the response rate only slightly, though response duration can be prolonged. oxorubicin plus DTIC resulted in a 46% response rate ith the median survival of responding patients creasing to 15 months.[4]

The four-drug regimen, CYVADIC (cyclophospha- ide, vincristine, adriamycin and DTIC) is, perhaps, the ost popular regimen. The addition of cyclo- hosphamide and vincristine to doxorubicin and DTIC creased the overall response rate to 50% and 17% of e patients had a complete response. The median rvival in this SWOG study was 16 months.[5] Not all udies of CYVADIC, however, have duplicated this egree of success. Using the same dose and schedule as e SWOG study, a European group had a 24% response te[6] and UCLA achieved a response rate of only 15%.[7] hese combinations have never been compared to oxorubicin alone in a randomized fashion, and it is not et known which, if any, of the drugs should be used in ombination. Adding other active agents such as ctinomycin D, low-dose methotrexate, and methyl CNU has not been successful.

In an attempt to improve the results, the M. D. nderson Hospital used a protective environment and rophylactic antibiotics and escalated the standard YVADIC doses. Of 15 patients treated in this fashion, 4% had a response. There were 27% complete esponders, with a median survival of 22 months.[8]

Adjuvant treatment for soft tissue sarcomas is just eginning. Preliminary results in two different protocols ppear promising in reducing relapses.[9,10] Regimens sed have included COMPADRI (cyclophosphamide, incristine, phenylalanine mustard, and adriamycin) and LOMAD (vincristine, high-dose methotrexate, driamycin, DTIC, chlorambucil, and actinomycin D).

steogenic Sarcomas

High-dose methotrexate with leucovorin rescue has een reported to produce the highest single-agent esponse rate in osteogenic sarcoma. Memorial Sloan- ettering Cancer Center in New York reported an 86% esponse rate with weekly doses of 8 to 12 gm/m^2.[11] This egree of success appears dependent upon following a igorous schedule with careful monitoring of serum ethotrexate levels, urine volume, urine pH, and eucovorin rescue doses.[12] It is this attention to detail hich the New York investigators feel separates their successful studies from others which have not shown a high response rate despite significant toxicity.[13] For example, the Mayo Clinic had only one responder in 16 patients treated with their high-dose methotrexate regimen.[14] Thus, because of its high cost, toxicity, and questionable efficacy, high-dose methotrexate is not widely available.

Other approaches include using doxorubicin alone or the CYVADIC regimen. Both have a 22% response rate in advanced disease.[15] A 60% response rate was obtained in 13 patients treated with the combination of bleomycin, cyclophosphamide, and dactinomycin (BCD).[16]

Limb Salvage and Adjuvant Therapy in Osteogenic Sarcoma

With the demonstration of activity with chemotherapeutic agents, attempts to save limbs and decrease the postsurgical relapse rate were begun. Adjuvant studies were based on the premise that the disease-free survival after excision of the primary tumor was only 20%, and most relapses occurred in the lungs within the first two years. This implied metastatic disease at the time of diagnosis. When the initial report of adjuvant high-dose methotrexate claimed an 80% 2-year disease survival,[17] adjuvant therapy became a common practice. This has become an area of controversy. The Mayo Clinic has demonstrated a disease-free survival rate of 40% to 50% in their surgery only series.[18,19] This is presumed to be a consequence of better staging (i.e., chest computed tomography scanning) and improved surgical techniques. The initial study of adjuvant therapy has had a decline from 80% disease-free patients at two years to 43% at five years.[20] Combination chemotherapy in an adjuvant setting, using many different regimens, has produced disease-free survival rates from 50% to 90%.[1] A controlled trial is now under way using the optimum chemotherapy regimen as defined by Memorial Sloan-Kettering compared to a surgery alone arm. The chemotherapy consists of preoperative high-dose methotrexate, doxorubicin, and the bleomycin, cyclophosphamide, dactinomycin combination. Platinum is added to the same five drugs postoperatively if less than 90% tumor necrosis was achieved with the preoperative chemotherapy.

Limb salvage approaches have consisted of the use of either systemic chemotherapy preoperatively (the above Memorial Sloan-Kettering protocol) or intra-arterial therapy directly into the tumor bed with Adriamycin followed by radiation therapy and the limb salvage surgery. Both approaches have demonstrated initial success.[21,22]

Studies at the University of Arizona

Platinum is a relatively new chemotherapeutic agent with demonstrated activity in sarcoma[23] including tumors resistant to Adriamycin[24] and high-dose methotrexate.[25] Direct infusion of tumors with platinum alone has resulted in response rates of over 50%.[26] A combination of Adriamycin and platinum has been used for the past decade in other solid tumors,[27] and has already demonstrated effectiveness when used in the adjuvant setting for osteogenic sarcomas.[25] Additive and, in some cases, synergistic effects have been seen in vitro.[29,30] Both drugs can be given at maximum doses as their toxicities do not significantly overlap. This combination is now in use at the University of Arizona to determine its response rate and response duration. The regimen will be used for advanced disease, in the adjuvant setting, and in preoperative infusions.

Preoperative infusions are given as part of a multidisciplinary team approach to limb salvage therapy. Patients are seen and evaluated by the radiology, orthopedic surgery, radiation oncology, and hematology/oncology departments. After appropriate diagnostic and staging precedures, an arteriogram is obtained with placement of an indwelling catheter in the tumor's blood supply. Adriamycin is then infused over 72 hours, interrupted three times for bolus platinum infusions. Immediately following chemotherapy, radiation therapy consisting of 3,500 rads over two weeks is given. One week after radiation, limb salvage surgery utilizing artificial prostheses or autologous bone grafts is performed. Postoperatively an additional five courses of Adriamycin plus platinum chemotherapy is given as adjuvant therapy.

In summary, chemotherapy for both soft tissue and bone sarcomas needs to be improved. In metastatic disease, complete responses are rare and patients with partial responses have a duration of survival of less than two years. The optimum drugs and dosages to be used in preoperative therapy remain to be defined. Most adjuvant studies have a 40% or greater relapse rate. Future approaches to the chemotherapy of soft tissue sarcomas should emphasize the development of new agents with greater therapeutic efficacy than doxorubicin. For bone sarcomas, the role of high-dose methotrexate needs to be varified and the debate of adjuvant chemotherapy resolved.

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Psychiatric
Disorders

he Unicorn in the Corral:

ow Different is the hysician's Family?

homas E. Bittker, M.D.

ditor:
homas E. Bittker, M.D.

The physician's family, in spite of the status, financial dvantages, and power associated with the physician's le, has not been immune from the threats and allenges confronting the traditional American family. lthough some see the physician's family as being a ulwark of stability, there are special stresses associated ith the physician's role. It is these stresses that are the cus of this article.

The traditional American family has sustained such a rious assault on its integrity in the past century that me question its capacity to survive. Two traditional mily functions—the primary socialization of children d the stabilization of adult personalities—have adually been eroded by the intrusion of state agencies mbined with the ineptness of the nuclear family in ping with change.

The nuclear family, typically the model family in the nited States, has experienced a rapid weakening of ties extended family units. The adaptational value of a ghtly knit family network conforms nicely to the emands of an agrarian society; it fits less well in an dustrialized urban society where values seem to ange as rapidly as technology.[1] Sixty-five percent of all omes and apartments are occupied by other than a vo-parent family, and single-parent families are rowing at 19 times the rate of dual-parent families.[2] amilies, indeed, are isolated from the mainstream of cial institutions and the traditional nuclear family may ecome an anachronism.

Compared to nonphysician professionals who suffer dissatisfaction rates of 32 percent; physicians and their families had a 50 percent higher rate of marital distress.[3] The most vulnerable physicians in Vaillant's study are more likely than their controls to show traits of dependency, pessimism, passivity and self-doubt. On the other hand, Rose and Rosow[4] point out the divorce rate among the general population in California is 41 percent higher than it is among age-matched physicians. Furthermore, complaint rates from professionals in California indicated that physicians stood next to natural scientists as the most stable of married professionals, with divorce complaint rates of 16.4 per thousand per year. The average among all professionals was 18.3 per thousand and that of the total population was 22.6 per thousand.

McCue[5] offers an incisive review of the special stresses of medical practice. All of these will influence the physician's family life. They include:

1. *Coping with the burden of suffering.* In the author's words, "Medicine is selected as a profession by students who expect to be rewarded by satisfying encounters with their patients, yet their chosen career consists of routinely interacting with persons who are anxious, uncomfortable, and often unable to express gratitude or affection."

Many patients come in pain, requesting relief, and often the physician may greet the pain with suspicion rather than compassion. Fear of manipulation by patients with drug acquisitive behavior is especially common among residents and nurses who tolerate the complaints more willingly than the disapproval of their peers. Furthermore, the physician is not only entrusted with the relief of pain but also the decisions to inflict pain, to proscribe pleasures, or to deny that palliative treatment of discomfort.

2. *Fear.* Most patients come in fear and fear contaminates the health professions. Health professionals erect high barriers against recognition of fear within themselves. One only needs to observe the health professional at work in a coronary care unit to be impressed with how adept the human species is in constructing masks of equanimity.

3. *Sexuality and seduction.* Physicians are privileged to probe into areas of the body that are hidden from all others and into private aspects of patients' lives that are disguised with psychological defenses and denial. Familiarity, in this instance, often breeds attempt. Family practitioners, obstetricians, and internists are most vulnerable to sexual seduction. One survey[6] disclosed

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om: Arizona Health Plan, Inc., 4811 North Seventh Street, Phoenix, rizona 85014. Dr. Bittker is Chairman of the Physician's Health ommittee, Arizona Medical Association, Phoenix, Arizona and ssociate in Psychiatry, University of Arizona College of Medicine, ucson, Arizona.

that at least five percent of physicians have had sexual intercourse with their patients.

4. *Death.* Many physicians enter the profession to defeat death. All of us are disappointed. Aggravating the problem in the late Twentieth Century is the availability of a number of technological innovations which permit physicians greater power in prolonging life and possibly prolonging suffering.

5. *Uncertainty.* While society conveys on the doctor an almost godlike power, the physician—at least the sophisticated physicians—is acutely aware of the limitations of his capacity. Nonetheless, patients look to the doctor for predictability and certainty. In behalf of his patients, the physician erects a facade of omniscience which often contaminates the role shift between professionalism and intimacy.

Adding to these burdens are the special problems of envy of one's neighbors, guilt associated with financial success, and the experience of being in a fishbowl scrutinized by others for any evidence of weakness. Studies on physician impairment indicate that the seeds of impairment can be discovered in careful histories of the impaired physician's childhood. A study of drug-dependent physicians indicated that of the 30 physicians in the study, only four spoke favorably of their mothers and one spoke favorably of his father. The father was perceived typically as passive, withdrawn and indifferent.[7] Although capable of offering care to patients, the depression-prone and drug-abused-prone physician seems distant, often passive and isolated according to family members. The demands for intimacy can be particularly difficult at times when the physician has little attention or energy left over from an exhausting practice.

But, the impaired physician is just the tip of the iceberg. As Vaillant's survey indicates, approximately half of us cope with our self-esteem problems by struggling for perfectionism, certainty, and correctness. The opportunity for power and financial success available within the walls of the hospital or office seem too tempting when compared with the uncertain opportunities provided within family life.

Add to this the discrepancy between our skills as medical technicians and our skills in human interaction and you have a formula for vocational success but emotional distress in the family.

At a recent conference on stress management for physicians, I informally surveyed 22 physicians asking two questions: Is the physician family different? And, if so, what contributes to those differences? The lack of rigor of the survey and the nature of the setting, obviously undermines the reliability of the data. Nonetheless, 18 of the physicians interviewed (all male) perceived a sharp discrepancy between their family life and that of their nonphysician friends. This was subsequently endorsed by interviews with ten of twelve physician job applicants in a large health maintenance organization.

Among the stresses identified most frequently wer the following:

1. The work of being a physician is so compelling as t leave little energy available for the demands of intimac and suppport in the family.

2. Patients are so demanding and covertly or openl hostile as to induce a hostile state in the physician.

3. Physicians are ill-trained in coping with probler patients: the clingers, demanders, help-rejectors, an denyers. They often feel helpless. The helplessness soo yields anger and the family is frequently the displace target of the anger.

4. The physician's schedule is unpredictable. On physician remarked how his wife flew into a rage whe he was paged after the family had just embarked on family picnic which had been planned for two weeks

5. Many physicians conveyed an inability to disclos the specifics of their burdens to their spouses. This wa particularly true in psychiatry where the demands (confidentiality prevented a detailed rendering of th patient-related stresses that the physician ha experienced.

6. Most physicians acknowledged that they carried burden of hostility around with them. The healthie among the survey respondents had set aside speci times wherein they could drift off while alone, sheltere from the demands of any other person.

How can the physician cope with the challenges an stresses that his profession and social role places upo his family? I offer below several suggestions that hav worked in my clinical practice:

First, become aware of one's strengths and liabilities a a family member. Review with the family the specifics o how being a physician's family may affect each membe By sharing an understanding of the problems, on mitigates against resentment and guilt.

Second, become students in learning how to live Appreciate that, as physicians, we are like dinosaur overly specialized in one area of development, but quit undeveloped in other areas. This is a byproduct of ou very technically-oriented educational system. We are however, good students and should employ ou learning skills in behalf of developing skills in intimac and in play. Take courses together; participate in family enrichment program; set aside time for learnin about other aspects of life beyond medicine.

Third, schedule high-priority time for family activitie Arrange on-call responsibilities so that they do no intrude on critical family events.

Fourth, develop a long-range family plan with you spouse. Explore ways to bring to your day-to-da existence activities that have relevance to these long range plans. Thus, the plan should not be merely drean but rather an outline for a program for living.

Critical in all of the above is time for being, time fo pleasure and opportunities for good humor. The fir step in learning about ourselves should be taken wit humility.

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Radiology

ase of the Month
o. 63

nathan M. Levy, M.D.
ıry J. Stegman, M.D.
ımuel J. Hessel, M.D.

ditors:
ɔnathan Levy, M.D.
ınice R. Smith, M.D.

A sixty-three year old lady had a pulmonary mass, and ɔronchoscopy positive for malignancy. On a bone scan ior to surgery, areas of increased uptake were seen er both femurs. (Figure 1)

What is the abnormality?

What do you think will happen to these changes ɔstoperatively?

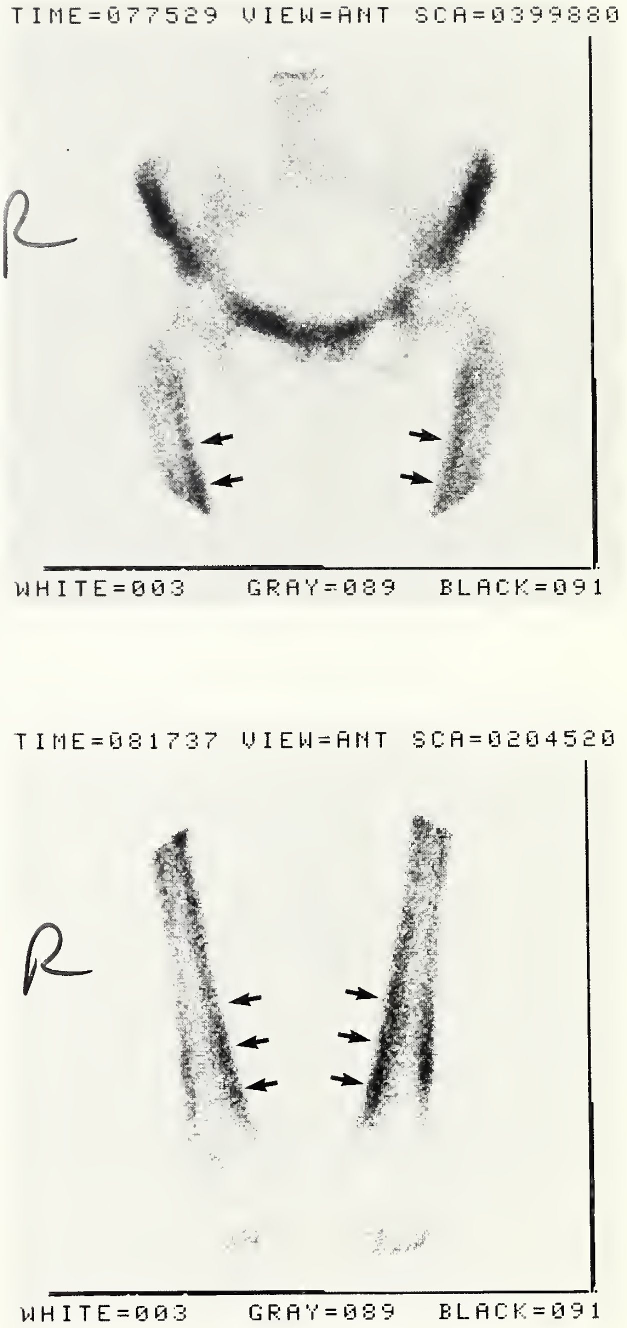
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Figure 1
Scintigraphic images of the pelvis (A) and femurs (B) show areas of increased uptake of both femoral shafts (arrows).

Continued on Page 32

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om: The Department of Diagnostic Radiology, Scottsdale Memorial ɔspital, 7400 East Osborn Road, Scottsdale, Arizona 85251.

Answer:
Hypertrophic Pulmonary Osteoarthropathy

Hypertrophic pulmonary osteoarthropathy (HPO) is a syndrome consisting of clubbing of the fingers and toes, swelling and pain of the extremities and periosteal new bone formation in the tubular bones. Sweating, flushing and/or blanching of the skin may also be present. Though classically associated with malignant tumors of the thorax, HPO may also occur with inflammatory lung disease, cyanotic congenital heart disease, tumors of the esophagus, stomach or liver, inflammatory bowel disease and primary cholangitic cirrhosis. Relief of symptoms, often within days, may result from resection of the primary lung lesion or intrathoracic vagotomy. The pathophysiology of the syndrome is presently unknown.

The scintigraphic hallmark of HPO is increased radionuclide uptake in the cortices of the tubular bones. (Figure 1). Involvement is almost always regular and symmetrical, and is usually more prominent in the lower than in the upper extremities. However, contrary to older notions of the disease, bones other than those in the extremities are involved in one third to one half of cases. These include the mandible, scapula, patella and clavicle. If increased uptake is seen only in the lower extremities, other processes which cause periosteal reaction, such as venous stasis and dependent edema, should be considered.

In our patient, the diagnosis of HPO was confirmed by plain films of the knees. (Figure 2). The pulmonary tumor was resected, but positive hilar and mediastinal nodes indicate a guarded prognosis.

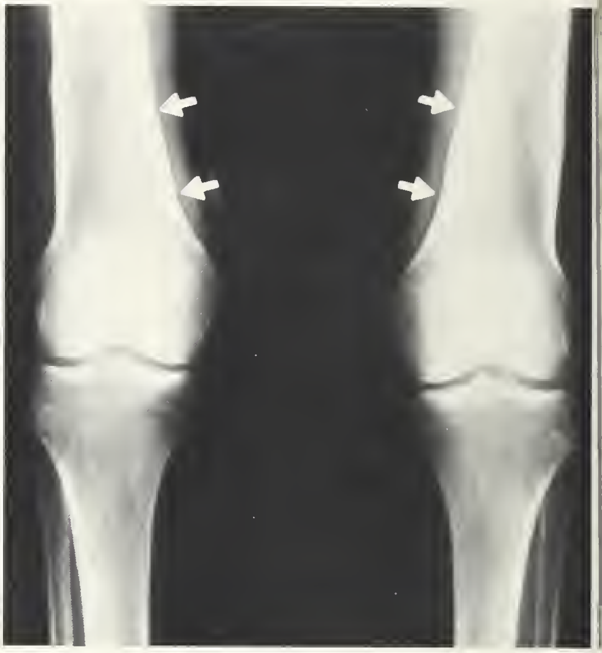

Figure 2
Radiograph of the knees shows dense periosteal reacti (arrows).

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Surgery

asectomy Reversal
echnique and Results

herwood E. Denton, M.D.
illiam W. Bohnert, M.D.
yde W. Kurtz, M.D.

ditor:
ack A. Friedland, M.D.

Abstract

Requests for vasectomy reversal have been increasing. Much has been written about the microscopic reversals. t, however, requires considerable training and frequent se of the microscope to maintain proficiency. The terature was reviewed for the different techniques of asectomy reversal and the results vary more with the urgeon than with the technique used. The authors eviewed sixty-six consecutive non-microscope vasec-omy reversals performed in an out-patient facility and here was a pregnancy rate of 63% of those followed over one year. Thirty-nine cases were performed macroscopically with stents and twenty-seven cases were performed with 2.5 loupe magnification without tents and the pregnancy rate was 65.5% and 61% espectively. The authors conclude that the non-microscopic techniques of vasectomy reversal has essentially equal results as the microscopic technique nd is cost effective. It is suggested that the surgeon quote to the patient his results for the operation he proposes.

Bilateral vasectomy, as a method of birth control, has become popular over the past several years. It is estimated that over one million such procedures are performed in the United States each year.[1,2] As a consequence of this and the increased divorce rate, the number of requests for vasectomy reversals has dramatically increased.

In 1948, O'Connor[3] sent questionnaires to 1,240 urologists regarding vasovasostomies and 750 replied. Only 135 urologists had performed the procedures one or more times. The number of operations performed was 420, of which the operation was termed successful in 168 (38%) based on spermatazoa in the semen.

The first report of successful results in vasectomy reversal was by Phadke and Phadke[4] in 1967, who reported on 76 cases of stented vasovasostomies with a pregnancy rate of 57%.

As recently as 1973, Derrick[2] sent 2,775 questionnaires to urologists with 1,363 replies; 821 urologists had never attempted the operation (60%). Only 542 (40%) of those replying had performed the procedure for a total of 1,630 cases (3 operations per urologist) with a pregnancy rate varying from 10.9% without a stent to 26% with a nylon stent.

In 1977[5] and 1978[6] Silber described his two layer microscopic anastomosis and defined normal sperm counts after a vasovasostomy as 20 million per milliliter (vs. 40 million in normal patients) with 60% motility and 70% normal form. In his initial study of 42 patients followed for 18 months, the pregnancy rate was 71%. He has reported on several hundred subsequent vasovasostomies, but unfortunately, has not mentioned his pregnancy rate. He did report that the semen count was normal in 91% of the cases where the vasectomy had been done less than ten years, with sperm present in 94% of these cases. If the vasectomy had been done over ten years, only 35% had a normal count and 47% of the cases had any sperm in their ejaculate. It was demonstrated that spermatogenesis proceeds essentially unchanged in the testicle after a vasectomy as does hormonal production, but that poor results of vasovasostomies after long time intervals was due to pressure necrosis of the epididymal tubular cells. He also pointed out that there was no correlation between sperm antibodies after vasectomy and the recovery of fertility after vasovasostomy.

Fallin[7] in 1981, described a one layer, full thickness, anastomosis using a 2.5 magnification loupe on 36 cases with a 57% pregnancy rate.

Microscopic anastomosis of the vas deferens probably results in the best anatomical result, but has the disadvantage of requiring considerable practice in the laboratory,[8] and requires frequent use of the microscope to maintain proficiency. According to McLaughlin,[9] it results in no better than a 2% higher pregnancy rate in experienced hands. Wickland[10] and Fenster[11] feel that the results of vasectomy reversal is dependent on the surgeon rather than on the type of procedure performed. Martin,[12] Kaufman,[13] and Evans,[14] also feel microscopic vasovasostomy is not necessary for good results.

In view of reports of pregnancy rates in excess of 50% by both macroscopic stented anastomosis, loupe magnification non-stented anastomosis, and two layer

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From: 3411 North Fifth Avenue, Phoenix, Arizona. Reprint request to Sherwood E. Denton, 3411 North Fifth Avenue, Phoenix, Arizona 85013.

Table 1

Reason for Request for Vasectomy Reversal

12/66 — Same Wife = 18%

54/66 — Remarried = 82%

microscopic anastomosis, the authors reviewed their 66 cases of vasovasostomies from January 1977 until May of 1981 with a follow-up in each case of at least one year.

In 54 of these cases, the request was because of a divorce and remarriage (82%) and in 12 cases (18%) the patient remained married to the same wife.

All procedures were done in an out-patient facility under general anesthesia. The first 39 cases in this series were stented with a No. 2 nylon left in for approximately seven days, with the anastomosis being accomplished with six to eight sutures of 7-0 chromic or 7-0 prolene into the muscularis without entering the lumen.

The last 27 cases were done without stents using 2.5 loupe magnification with four full thickness sutures of 7-0 prolene and two to four additional sutures of 8-0 nylon in the muscularis alone after dilating gently the proximal and distal lumens of the vas deferens with lacrimal probes.

Most of these cases were done on a Friday and the majority of the patients returned to work on Monday losing one day of work time. The total cost, including surgeon's fees, facility fees, and anesthesia were approximately $1,600.00

Of the 66 cases, 13 were lost in follow-up within the first year, and there were six cases where pregnancy was impossible. (One wife had total bilateral tubal obstruction, one wife had a hysterectomy six months postoperatively, one couple separated, and three couples changed their minds and the wife resumed birth control methods.) Of the 47 cases where pregnancy was possible there were 30 cases where one or more pregnancies occurred (63%).

In the 39 cases where stents were used, seven were lost in follow-up. Three wives were found to be sterile or resumed birth control methods, and there were 19 cases where one or more pregnancies occurred (65.5%).

In the 27 cases where a one layer unstented anastomosis was done, there were six cases lost in follow-up, three cases where the wife had a hysterectomy, separation occurred, or where the wife resumed birth control methods. Of the remaining 18 cases, there were 11 pregnancies (61%).

Table 2

Vasectomy Reversals

66	Total Cases
13	Lost to follow
6	Wife sterile, separated, resumed birth control
47	Cases followed
30	Pregnancies

Pregnancy rate 30/47 = 63%

Table 3

Vasectomy Reversal

39	Cases Stented
7	Lost to follow
3	Resumed birth control or sterile
29	Cases followed
19	Pregnancies

19/29 = 65.5%

Table 4

Vasectomy Reversal

27	Cases — 1 layer unstented
6	Cases — Lost to follow
3	Cases separated Sterile (hysterectomy) or resumed pill
18	Cases followed
11	Pregnancies

11/18 = 61%

Table 5

Timing of Pregnancy After Reversal

1st Pregnancy occurred less than 1 year 16/30 = 53%

1st Pregnancy occurred after 1 year 14/30 = 47%

Table 6

Postop. Sperm Counts

66 Cases

12 — never returned for count

52/54 — cases — some sperm = 96.3%

40/54 — 74% = counts over 20 million

14/54 — 26% = counts less than 20 million (including 2=0)

Table 7

AGE

Range 26-47 years average & mean 35 years

Median age pregnancy = 35

Median age no pregnancy = 35

Of the 30 cases where pregnancies occurred, the first conception occurred within one year in 16 cases (53%) and after one year in 14 cases (47%).

Twelve patients of the 66 never had semen analysis performed postoperatively. Of the 54 remaining cases, 52 had some sperm present in their semen (96.3%) In 40 of the 54 cases, the sperm count was over 20 million per mililiter (74%).

Age in this series of cases did not seem to play a factor. The age range was between 26 and 47 years, and the mean age of the total group was 35 years in both the groups where pregnancy did and did not occur.

The time interval between vasectomy and reversal was significant in this series of cases. When the time interval was five years or less 24 of the 26 cases who had semen analysis had sperm counts over 20 million (92%), and of the 23 patients followed, there were 16 pregnancies (70%). In those cases where the interval was between five and ten years, 21 cases had semen analysis and 14 of these had counts over 20 million (67%). Of the 20 cases followed, 12 pregnancies occurred (60%).

In all cases where the interval was ten years or less, 38 of 47 patients with counts had 20 million or more (80%). And, there were pregnancies occurring in 28 of the 43 cases followed (65%).

In all six cases where the time interval was over ten years, semens were done and only two patients had counts over 20 million, and of the four cases followed there were two pregnancies (50%).

The mean sperm count of the 21 cases where a pregnancy occurred and a count was done, was 45 million. Nineteen of these had counts over 20 million (90.5%), there was one with a count of 10 million and another of 15 million. All 17 of the patients were followed when a pregnancy did not occur and had counts, and the range was zero to 70 million with the mean count of 35 million. Eleven of the 17 patients had counts over 20 million (64.7%).

Of the 13 cases lost at follow-up, ten had counts performed and nine of these were over 20 million (90%) with a medium count of 40 million.

Evans[14] feels urologists have been too taken by whether the vasovasostomy results in sperm being present in the semen and too often there is only one semen examination. When serial examinations are done between two and six months, the semen quality will usually improve throughout this period. In many of our cases where pregnancy occurred and the count was low, it was a solitary count at only two or three months. The pregnancy rate is probably the only reliable criteria with which to evaluate the results of vasovasostomy.

In two of our cases, the early counts were good and subsequent counts after one year reverted to zero. In one of these cases a pregnancy occurred. This has also been reported by Marshall[15] and Martin.[12]

The pregnancy rate of both the stented and unstented one layer microscopic anastomosis in this series are essentially the same, and we prefer the unstented

Table 8

Time interval between vasectomy and reversal range 1 to 20 years.

Average and mean = 6 years.

Less than 5 years	24/26	= 92% counts over 20 million.
	16/23	= 70% pregnancy.
5 to 10 years	14/21	= 67% counts over 20 million.
	12/20	= 60% pregnancy.
Under 10 years	38/47	= 80% counts over 20 million.
	28/43	= 65% pregnancy.
Over 10 years	2/6	= 33% counts over 20 million.
	2/4	= 50% pregnancy.

Table 9

Relationship between sperm counts and pregnancy.

30 pts. — Pregnancy.

9 pts. — Never returned for count.

21 pts. — With counts — Range = 10-90 M (Median = 45M)

19/21 — Counts over 20 million.

2/21 — Counts under 20 million (10M & 15M).

Table 10

17 pts. = No pregnancy but followed.

17/17 = Counts done.

Range = 0-70 million.

11/17 = Counts over 20 million.

Mean Count = 35 M.

Table 11

LOST TO FOLLOW

13 Cases

3/13 = No count done.

1/13 = Count below 20 million.

9/13 = Count over 20 million.

Median count — 40 million.

because it allows for the patient to resume showering the first postoperative day and allows the patient to be less concerned about infection without the presence of a foreign body extruding through the skin.

The authors agree with Martin,[12] Kaufman,[13] Evans,[14] and Fenster[11] that the microscopic two layer anastomosis is not necessary, and it is our opinion that it should not be used unless there is adequate training, considerable lab experience, and then frequent performance to maintain proficiency.

Since there is such a diversity of pregnancy rates between different surgeons with different procedures, it is also felt by the authors that the patients be quoted the pregnancy rate rather than a success rate based on counts over 20 million, and that these results should be the surgeon's results doing his particular operation.

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Problem Solving for Third Year Medical Students

Doctors solve patients' problems; they do so daily and repetitively. Traditional medical education has largely ignored this aspect of medical practice, anticipating that students will somehow acquire this skill. Instead, emphasis has been placed upon acquistion of skills, knowledge, and professional attitudes. Although these are important components of medical decision-making, they cannot be considered *in vacuo*. In the past decade increasing attention has been focused on the problem solving process; its nature, how it is acquired by physicians and if it is possible to "teach" it. At the University of Arizona College of Medicine, while all courses deal in problem solving, we have attempted especially to integrate problem solving skill education with the more traditional topics in the required junior year Pediatric Clerkship.

A structured mini-course in the process of problem solving, weekly patient-problem oriented seminars, and daily practice by the students are combined into a "course within a course." Our goals are to identify the known elements of the process for the students; to afford them supervised practice; and to encourage them to think about their "thinking" as well as the medical facts.

The structured course has been in place for 12 years now and consists of weekly sessions with a small group of students (usually six to eight). An initial session defines clinical problem solving and dissects it into its major components: data, hypotheses testing and clinical action. Each segment is detailed and knowledge garnered from research is presented. The remaining five sessions consist of student-centered discussions of how to think about specific problems; some are pre-selected cases from the professor's experience and some are current children under care in one of the pediatric units. The former are chosen for their proved value in illustrating the principles of problem solving and the latter are selected by the students for their currency and to give both relevancy and reality to the exercise. Students explore the possible explanation for the data presented and then receive a friendly, but pointed, critique from the instructor and from other students. At all times they are asked to explain *how* and *why* they are thinking what they are thinking, with less emphasis on the facts or on specific pediatric knowledge; if they don't know specific facts these are immediately provided in order to maintain the focus on the reasoning process.

The weekly seminars are in the case-history format, but discussions include both content (facts) and process (method of solving the particular problem). Each is led by a different instructor and is topic-oriented (e.g., GI, CNS, etc.). All of the students participate and are expected to have read assigned material prior to the seminar.

Finally, the entire faculty and staff have been encouraged to allow the students to express their own thinking during day-to-day clinical activity. Such practice should reinforce the more didactic, paper and pencil, sessions and provide students with the opportunity to compare their reasoning at the bedside with that of more experienced clinicians.

Does this mini-course achieve its goals? We cannot be certain that it does because no reliable and reproducible way has been found to examine for problem solving skill. Until such time as such methods are widely available, we can only rely on anecdotal evidence, inaccurate as this may be. Student testimonials and evaluation have been uniformly favorable, and those who have been through the courses and became residents in our institution report that the experience taught them to think about their reasoning and thereby improved it.

Vincent A. Fulginiti, M.D.
Professor and Head
Department of Pediatrics

Louis J. Kettel, M.D.
Dean, College of Medicine

Briefly Noted

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Suresh C. Anand, M.D., Phoenix, has written an article, "Comparison of Cloprednol and Prednisone in the Treatment of Asthma," which appeared in the September issue of *Current Therapeutic Research.*

Arthur Stewart Goldberg, M.D., Scottsdale, has met the requirements set by the American Board of Pediatrics for recertification in general comprehensive pediatrics. Of the more than 28,000 pediatricians who have been certified by the American Board of Pediatrics since its founding in 1933, over 600 have been recertified.

Louis J. Kettel, M.D., Dean of the University of Arizona College of Medicine, has been elected to membership on the executive council of the Association of American Medical Colleges. Dr. Kettel, one of six deans elected to serve three-year terms on the council, will also serve on the administrative board of the AAMC Council of Deans.

Lawrence I. Liebmann, M.D. and **Linda Mishlove, M.D.,** Phoenix, represented the medical profession in November at Horizon School's Health Fair '82. Drs. Liebmann and Mishlove counseled individual students about medicine as a profession.

Rajagopalan Ravi, M.D., Casa Grande, became a Fellow of the American College of Surgeons at the 68th Clinical Congress of the College in Chicago in October.

The American College of Physicians recently elected the following new Fellows from Arizona: **Marvin E. Padnick, M.D.,** Phoenix, and **Lawrence J. Lincoln, M.D., Jane M. Orient, M.D.,** and **Charles J. Sanner, M.D.,** Tucson. Their induction will take place at the College's annual meeting in San Francisco in April 1983.

Mervyn D. Willard, M.D., Phoenix, is the author of a 265-page text, "Nutrition for the Practicing Physician" which was published recently by Addison-Wesley Publishing Company, Medical/Nursing Division. **Robert A. Price, M.D.,** Phoenix, has written the following review of Dr. Willard's book:

What an excellent practical text for practicing physicians! We have been bombarded so long by Madison Avenue sales pitches for foods and vitamins that many of us have forgotten the basic principles of nutrition that may have been taught in medical school. This area has been a long-neglected field in our profession and
utilization of information presented b
Dr. Willard in his text will benefit our
patients as they have never before be
advised.

Dr. Willard begins with an in-depth
discussion of *malnutrition* and then th
impact of disease on nutritional states
He later discusses the effects of
malabsorption on our nutritional state
emphasizing defects in physiology tha
may contribute to the overall poor
health of our patients. The author the
elaborates on the *enteral and parenteral nutritional therapy* which
may be indicated in many of our
patients with gastrointestinal problem
Included in this are lists of the availab
preparation for such therapy, their
content and the indications for their
use. The rational use of *vitamin-miner supplement* is also presented and he
gives us a reasonable basis for our
selection of certain supplementary
products and emphasizes when they
should be employed. *Dietary patient education* and the diet prescriptions
that physicians recommend to their
patients is also presented. The
importance of salt restriction is
discussed as well as the application of
modern diabetic diets in a physician's
practice. Another chapter includes
special dietary needs in pregnancy an
during lactation. *Infant feeding,* the
selection of infant formulas and the
solution to providing proper nutrition
in children's diets is presented. *How t counsel healthy families* about their
diets makes up another chapter in thi
volume. It includes a discussion of
vegetarian diets, teenage dietary
problems, preventive dietary measure
that should be utilized for the elderly
etc. This section on the *nutritional management of cardiovascular risk factors* is also available with a discussi
of the latest information on the
lipoproteins and their influence in
cardiovascular diseases. Finally, there
an excellent chapter on *obesity,* its
causes, realistic weight control goals,
ketosis-inducing weight reduction die
and other dietary fads. Behavioral
strategies that can be employed are
presented and a coordinated weight
control program is finally developed.

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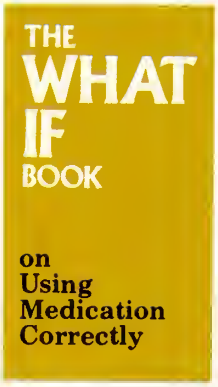

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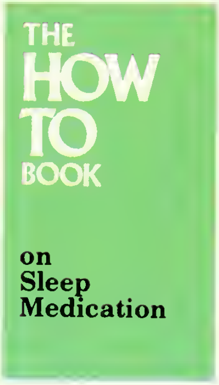

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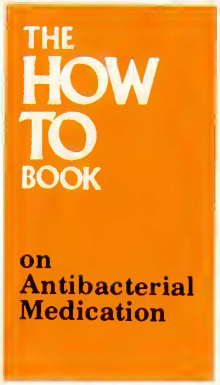

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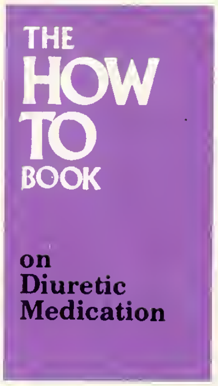

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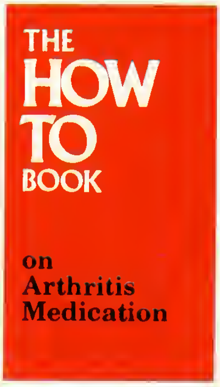

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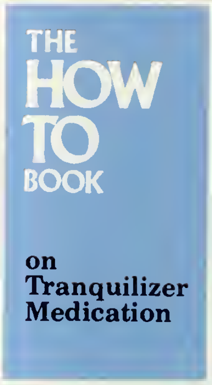

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culty members at the November Current Perspectives II seminar include (L. to R.) lan Y. Newhoff, M.D., Rosemary Gluck, M.A. and M.C., Robert B. Gilsdorf, M.D., rogram Chairman Jerome H. Targovnik, M.D., and Clifton Bogardus, M.D. Not own: Richard H. Kozarek, M.D.

"No man has a moral right to withhold his support from an organization that is striving to improve conditions within his sphere." *Theodore Roosevelt*

is chapter alone is worth the cost of e volume.

All in all, this text on nutrition fills a eat hiatus in our practical medical erature. Every practicing physician ould avail himself of this volume and ilize its contents in counseling and iding his patients from infancy to old e. Dr. Willard is to be congratulated r making this valuable volume ailable to the profession.

The Arizona Medical Association elcomes the following new members:

Cochise

Selim V. Sikman, M.D.
Orthopedics
P. O. Box D-1, Benson
University of Istanbul - 1956

Coconino

Bert McKinnon, M.D.
Orthopedic Surgery
710 North Beaver Street, Flagstaff
University of Colorado - 1973

Maricopa

Eric Fantl, M.D.
Ophthalmology
421 North 18th Street, Phoenix
University of Vienna - 1935

Mohave

Khalid S. Aslam, M.D.
Orthopedic Surgery
1330 Sycamore, Kingman
Dow Medical College, Pakistan - 1975

OrlandoA. Cacho, M.D.
General Practice and Surgery
P. O. Box 1427, Lake Havasu City
University of Santo Tomas - 1961

Drs. Robert E. T. Stark and Alan Y. Newhoff at Current Perspectives II.

Pima

Hector Allende, M.D.
Internal Medicine
1773 West St. Mary's Road, Tucson
National University of
Cordoba, Argentina - 1974

Robert J. Brooks, M.D.
Internal Medicine
1604 North Country Club Road, Tucson
University of Arizona - 1977

Harold H. Cameron, M.D.
Ophthalmology
P. O. Box 340, Cottonwood
University of North Carolina - 1970

Mark Caminker, M.D.
Internal Medicine
4723 North First Avenue - Tucson
Wayne State University - 1977

Larry Nahmias, M.D.
Psychiatry
1350 North Kolb, Tucson
University of Indiana - 1975
Walter Patton, M.D.
Obstetrics/Gynecology
5101 East Farness, Tucson
University of New Mexico - 1978
Steven Suffecool, M.D.
Anesthesiology
5200 East Grant Road, Tucson
Georgetown University - 1976
Earl Surwit, M.D.
Obstetrics/Gynecology
University of Arizona
Health Sciences Center
Georgetown University - 1973

New Resident Member

Diana McNeill, M.D.
University of Arizona
Health Sciences Center
Duke University - 1982

New Student Members

University of Arizona
College of Medicine
Patricia G. Carter
Suan Renee Cord
Nancy Curosh
Rene' C. Davis
Karen Duvall
Steven Paul Herzog
Adam Kartman
Howard Roy Lippman
Karen E. Makower
Jodey L. Marusich
Barbara J. Miller
Jan M. Pankey
Louise Taber
Kent Wellish
Maureen P. Wooten
Cynthia A. Works
Barbara L. Young

ArMA Reports

The minutes appearing in this section have been condensed. A complete copy of them will be sent to any member requesting one.

PUBLIC RELATIONS COMMITTEE

The Public Relations Committee met on October 16, 1982.

John E. Craft, Ph.D., Associate Professor of Telecommunications, Arizona State University, explained how the media functions in today's society. He discussed what individual physicians can expect when being interviewed by the media and gave some tips on how physicians should "meet the press." Dr. Craft also discussed the relationship between organized medicine and the media and predicted that the media would continue to play an adversarial role in reporting medically related news. He answered questions from committee members.

Drs. Davis, Brown and Block expressed their concerns about the public's attitudes toward physicians and propsed that ads be prepared for newpapers and television explaining that today's health care costs were the result of high hospital costs, rather than physicians' fees. They also suggested that the public be educated about what a physician is, why one becomes a physician, organized medicine's position regarding the Federal Trade Commission's jurisdictional dispute, and what the public can and cannot do to control health care costs.

The committee discussed many aspects of the "medical profession's image in the eye of the public and specifically the fact that 'practicing physicians' find their silhouette overwhelmed by the shadow of the health care industry." After a lengthy discussion, the committee took the following action: It was moved and carried to recommend to the Board of Directors that ArMA make a financial and philosophical commitment of great substance to public relations; that the foundation of such commitment should be honesty and openness with respect to ArMA's dealings with the public and press; and that, while it is recognized there may be risks in such an aggressive approach, the Association feels that the potential benefits outweigh those risks.

The committee discussed Dr.Fairbank's proposal for an anti-smoking campaign and agreed that other organizations are doing an effective job of conducting them and ArMA should encourage physicians to display in their offices the many fine pamphlets which have been developed by the Cancer Society, Heart Association, and others rather than mounting an individual campaign.

The committee was informed by Dr. Clymer that Blue Cross/Blue Shield of Arizona wished to distribute ArMA's *How to Cut your Health Care Costs* brochure and would pay ArMA a royalty of one cent per brochure.

PROFESSIONAL COMMITTEE

The Professional Committee met on November 10, 1982. The following reports were received from the various committee sections.

Section on Aging and General Medicine—Dr. Hagan, Chairman. Dr. Hagan reported that the revised definitions in the Medical Practice Act on unprofessional conduct have caused some consternation among physicians, particularly those statutes relating to a physcian prescribing for self/or family, as well as treatment of obesity with amphetamines and other sympathomimetic drugs. Considerable discussion ensued, with the feeling expressed by several present that this type of restriction is not properly placed in the statutes, but should be dealt with in some other way (referring to the prescribing restrictions), and that the total 30-day limit on treatment of obesity as stated is of questionable validity. On the latter point there was some disagreement. It was moved and carried that a letter will be drafted by Dr. Hagan expressing concern that a situation has been created whereby the state legislature is legislating morality to Arizona's physicians. The letter will be directed to the appropriate person or persons, whether the Board of Medical Examiners, or a committee, or persons in the Legislature (this decision to be made following the drafting of the letter).

Section on Disaster Medicine and Emergency Care—Drs. Kriegsfeld and Lawson, Co-Chairmen. Dr. Kriegsfeld reported that he has had difficulty getting responses to letters directed to Emergency Services of the Arizona Department of Health Services. Recently he did make contact with John Stafford, the present head of Emergency Services and plans are underway for statewide meeting to gather information on the nsportation problems of the nergency patient, in an attempt to ordinate services.

Section on Poison Control—Dr. nkel, Chairman. Dr. Kunkel reported at a Fellowship in Toxicology has en established through the University Arizona. It is one of three such llowships in the country. He also fered to provide a professional from department to speak at schools or ewhere on the subject of poison ntrol.

Section on Sports Medicine—Dr. erster, Chairman. Dr. Foerster pressed the concerns of the Section the "Good Samaritan" law and otection for team physicians. The tire matter has been discussed with MA's attorney, as well as others. The ecutive Committe of ArMA suggested . Foerster form a subcommittee to do ditional review. The November 5, 82 letter from Frank Parks was viewed, as well as a draft of a oposed amendment to the Education tutes.

It was the consensus of the mmittee that in all probability the od Samaritan Statute should not be ered. The problem should be dressed through the school health ws, by way of wording, which would ovide some protection from suit nless there is gross negligence) to all ose who participate as members of e school health team, i.e., physicians, rses, etc., who might from time to ne be involved in athletic activities, hether drawing a salary for this rvice (i.e., the school nurse). A ggestion that a plaintiff's attorney be ked to review the situation was ferred to the Sports Medicine ction.

Dr. Foerster reported that proximately 1,000 persons have rticipated in the B.A.S.I.C. (Basic hletic Sports Injury Care Course) over e past year. A course will be esented on the Navajo Reservation, d a B.A.S.I.C. course specifically signed for physicians is under nsideration.

Dr. Foerster advised the Arizona ainers Association would like ArMA's pport in requiring that athletic iners receive the appropriate ining, since it is often lacking. There e programs leading to certification at th Arizona State University and the niversity of Arizona. It was moved and rried to recommend that ArMA pport the position that anyone who is entified as an athletic trainer should ve appropriate training and edentials as a certified athletic trainer. was also reported that there is a ssibility legislation might be troduced to support and possibly mandate certification of athletic trainers. It was agreed, by those present, to request the Legislative Committee's support of such legislation should it be introduced.

It was moved and carried to extend a vote of gratitude to Dr. Foerster for the extensive efforts he and his committee have exerted to promote sports medicine in the state.

The Long Range Planning Committee asked the committee to consider the possibility of employing a "professional educator to promote scientific and education affairs for schools." After discussion the consensus was that there does not appear to be a need for that type of position since ArMA's Public Relations Committee and staff Communications Director are currently engaged in such activities, also many physicians respond to requests for assistance from schools on an individual basis. It was moved and carried to recommend to the Long Range Planning Committee that a professional educator not be engaged at this time.

The physician/nurse relationship study has been completed by the Arizona Hospital Association, when it is finalized the Committee will meet with representatives of the Hospital Association to review the results.

The ethics of the following situation were questioned: A surgeon is asked by another surgeon to consult or present a second opinion on a patient and then becomes the operating surgeon. There was considerable discussion and a motion was made recommending that ArMA support the guidelines of the American College of Surgeons concerning second opinions and that Arizona physicians be encouraged to follow those guidelines. It was suggested that the entire committee review these guidelines before making such a recommendation. It was moved and carried to table the motion concerning second opinions pending review of the American College of Surgeons guidelines.

HEALTH MANPOWER COMMITTEE

The Health Manpower Committee met on November 11, 1982.

After discussion and proposed motions the committee developed the following: It was moved and carried that the Health Manpower Committee recommend to the Board of Directors that ArMA maintain its support for the Rural Health Conference at the level of the past year.

It was reported that the National Health Services Corps gave a grant of $100,000 to the Rural Health Office of the University of Arizona for a study on medical manpower. The goals of the project are: 1) evaluation and research and 2) outreach functions (community development). The Rural Health Office has recognized a need for an advisory committee to review these activities. One member from each profession (nursing, medical, etc.) will be asked to participate on the Committee. It was moved and carried that the Health Manpower Committee recommend to the Board of Directors that ArMA participate on the statewide advisory committee for the Rural Health Office as outlined in Dr. Collin's letter of September 21, 1982.

It was moved and carried that the Health Manpower Committee recommend to the Board of Directors that an Ad Hoc Committee on State Manpower assessment be formed to develop a broad-based ongoing data system on physician manpower.

It was moved and carried that Dr. Melick be commended for his ongoing efforts to study the needs of rural communities and for his visits to smaller communities in the state.

No action was taken on the proposed resolution submitted by Dr. Melick.

The Committee briefly discussed an RFP from the Department of Health and Human Services on the development of a plan for analysis of the potential impact of a physician surplus. It was moved and carried that this proposal be referred to the Ad Hoc Committee on State Manpower Assessment, if it is formed.

LEGISLATIVE COMMITTEE

The Legislative Committee met on November 13, 1982.

The committee was advised of the results of the Advisory Committee meeting on August 11, 1982. The thrust of the meeting was the need to become much more active and to develop better communication lines with the county societies, specialty societies, and the Legislature. Development of these communication lines with the Association members could be achieved through more frequent issues of *Legislative Beat*. Specialty societies and county societies have been asked to name a person from their groups to assist the Legislative Committee on matters directly affecting their areas.

More social repartee will be developed between the Legislature and physicians. A series of weekly luncheons will be scheduled with various physicians and Legislators (maximum of 6/8 people) and a general reception will be held once the Legislature opens. The details will be handled by the ArMA lobbyist and staff.

Regarding the procedure for bill analysis and recommendations, it was the consensus of opinion that staff, lobbyist, and a small group of members of the committee would have to go over every bill and a summary of the contents would be sent to committee members. Committee members expressed the desire to continue receiving copies of all health-related legislation.

The Legislative Committee has two functions: 1) to develop a position for ArMA and 2) to effect that position. A subcommittee should be formed to handle emergency situations and act as emergency witnesses if the need arises. It was also decided that the Legislative Committee would meet more often once the Legislature is in session—sometimes on short notice.

A brief rundown was given on how ArHA handles legislative bills. Their biggest concerns during the upcoming session will be the involvement with AHCCCS (litigation or legislation, when they see how the program evolves), funding for maternal and health care, and ambulance regulations.

The Physician for a Day Program was discussed. It was decided to weigh the PR value of the program and to come up with some guidelines to present to the legislative leadership so that in emergency situations the physician's role is not put in jeopardy. It was moved and carried that a subcommittee of one, chaired by Dr. Kurtz, be formed to formulate a motion for the Physician of the Day Program and bring it back to the committee.

A position paper from President Norman Fee, M.D., Arizona Chldren's Hospital Medical Staff, was distributed to the committee for its information.

PHYSICIAN'S HEALTH COMMITTEE

The Physician's Health Committee met on November 16, 1982.

Following a welcome to and introduction of committee members and guests, Dr. Bittker, Chairman, commented briefly on the activities of the committee relative to active cases, as well as the attempts being made to create liaisons not only with hospitals, but other professional groups as well.

Training Experience

Following a viewing of a video tape, "Confrontational Strategies for Difficult Doctors," which had been made available by the Washington State Medical Association, the committee discussed the film and the various aspects of confrontation of an impaired physician and determined that successful confrontation might be achieved if the model outlined below was used.

1. To show empathy, warmth and genuineness in all contacts with the alleged impaired physicians.
2. To be as fully prepared as possible prior to contact.
3. To avoid accusations or diagnosis.
4. To enlist the support of others.
5. To seek agreement on evaluation plan.
6. To continue follow-up.

In line with the foregoing and the concensus of those present that the majority of impaired physicians were not being reached, the group discussed at great length those problems which tend to hinder the activities of a committee such as this, making its credibility and successes less than they should be, and developed the following list.

1. Reluctance of colleagues to report.
2. Lack of anonymity.
3. Inexperience of confronters in handling problem.
4. Resistance of an denial by physician.
5. End-stage problems.
6. Insufficient neutrality.
7. Fear of retaliation.
8. Lack of compassion.
9. Confusion as to committee's perception.
10. Too hospital/uban/organization oriented.
11. Lack of primary physician.
12. Minimal re-entry process.
13. Unwillingness of other to get involved.
14. Anger contaminated.
15. Assaults omnipotence of medical profession.
16. Energy crisis or like problems draw attentions elsewhere.

Based on this list and the view to arriving at possible working solutions for improvement, the attendees selected and priortized the main five problems, as follows:

1. Fear of retaliation.
2. Resistance of and denial by physician.
3. Inexperience of confronters in handling problem.
4. Lack of anonymity.
5. Confusion as to committee's perception.

By way of suggestion, it was determined that the following might b helpful in seeking solutions to the problems outlined above.

1. Appeal to concerned parties (hospitals, auxiliaries, physicians and patients) for their assistance and help.
2. Education of the medical profession and the community by information dissemination on activities of the committee and resources available.
3. Better case planning for reported alleged impaired physicians.
4. Identification of someone within the hospital, medical office or community as a resource.
5. Preparation of a succinct, clear, legally-edited statement of committee's role.
6. Unidentified publication of case histories, follow-up and successfu re-entries.
7. Development of a self-referral mechanism.
8. Reassure commitment to protect anonymity.
9. Pursue rewrite of BOMEX reporting requirements.
10. Distinguish between "incompetent" and "impaired" physicians.
11. Be patient.
12. Publication of committee minutes
13. Clarify immunity for committe members.
14. Become more sensitive to clues o impairment.

Finally, it was the opinion of those present that many of these procedures could be handled by the development of a brochure which would be made available to the medical profession and others. It was agreed that the chairman and ArMA staff would begin work immediately to finalize such a documer which would encompass several of the items discussed during the meeting.

Staff was requested to seek from ArMA's legal counsel and opinion as to why attorneys might, and often do, advise their physician clients not to participate in reporting/case finding situations.

Concern was voiced that those physicians serving on the Physician's Health Committee were not legally protected nor did ArMA provide legal support in the event of a suit against a member or the committee and, following a lengthy discussion and a 7-3 vote, it was moved and carried to recommend to the Board of Directors of the Arizona Medical Association that funds be provided for legal defense of physicians serving on the physician's Health Committee in case of the filing a civil suit against a member of that mmittee by virtue of such physician's 'orts on behalf of committee tivities.

MEDICAL EDUCATION COMMITTEE

The Medical Education Committee et on November 18.

Section on Accreditation—Robert E. stings, Jr., M.D., It was moved and rried to approve the continued full creditation of Phoenix Memorial spital for continuing medical ucation for a period of four years.

The accreditation of the continuing edical education program of Arizona eart Institute has been discontinued cause the institute, after several minders, has failed to submit plication for re-survey.

In June ArMA received notice of a eeting, International Cardiovascular ongress, sponsored by the ternational Heart Foundation ossibly another name for Arizona eart Institute and certifying the eeting to be Category 1. Dr. Trahern ked members what they felt should done about the situation. After uch discussion: It was moved d carried to contact the director of e Arizona Heart Institute bv gistered mail to reaffirm that their creditation for continuing medical ucation has expired.

Dr. Hastings reported favorably on e recent ACCME meeting. He was pressed by the large imput by the ate medical associations in the draft of e Guidelines for Recognition of State ccrediting Bodies. One of the sessions ealt with a workshop for site surveyors d medical education directors which . Hastings felt the committee might sh to consider holding yearly.

The AMA/CME Conference dealt gely with review of the proposed uidelines for the "Essentials" for ccreditation. As far as the "Essentials" emselves were concerned, no real anges could be made.

Dr. Hastings stressed the importance accredited co-sponsoring ganizations being involved in the anning of the meetings they are onsoring, and that this must be done order for ArMA to comply with the sentials for CME.

It was pointed out by several embers that since the American cademy of Family Practice has fferent CME requirements from the ategory 1 as designated for the AMA ysicians Recognition Award, dual ME approval must be sought when anning a meeting. It was recommended that ArMA should inquire whether ACCME has had any discussions with the American Academy of Family Practice regarding this situation. It was also suggested that a representative of the Arizona Academy of Family Practice be appointed to the Medical Education Committee.

Dr. Trahern asked the Section on Accreditation to review ArMA's present CME materials to see what changes are needed to meet with the new guidelines for recognition of state bodies.

Members expressed their concern regarding the section of the guidelines dealing with on-site visits to the state accrediting bodies and the expense involved. It was pointed out that since the proposed guidelines will have to be presented to the AMA House of Delegates before being adopted, the committee's concerns should be addressed to ArMA's Delegates to the AMA.

Section on Certification—Ashton B. Taylor, M.D., Chairman. Dr. Taylor reported on the action of ArMA's House of Delegates which eliminated the mandatory CME reporting requirement for membership. The ArMA CME certificate has been redesigned to reflect only the expiration date (similar to the AMA Physicians Recognition Award), and CME application forms have been made generic, so they can be used for more than one year.

Section on Requirements—Albert G. Wagner, M.D., Chairman. It has been ArMA's practice, when approached about co-sponsorship, to recommend that an organization request co-sponsorship from an accredited organization nearest their location, but often organizations have requested that ArMA co-sponsor.

The importance of involvement in co-sponsored programs was reiterated, and Dr. Wagner suggested that members of the Medical Education Committee or ArMA should be assigned to participate in co-sponsored programs.

When written criteria is established for ArMA's co-sponsorship it should be widely published so that groups requesting co-sponsorship will know what to expect. Dr. Wagner also suggested that in resurveying for accreditation, the accredited organizations should be asked what programs they have co-sponsored and if they were actively involved in the planning of the programs.;

Donald J. Logue resigned from this committee because of his election as chairman of the Board of the Arizona Hospital Association. The Hospital Association has recommended that Thomas J. Gannon, President of St. Luke's Medical Center, be appointed as their representative to the Medical Education Committee. The appointment will be brought before ArMA's Board of Directors for approval at their next meeting.

The Council of Medical Specialty Societies has brought to the attention of ArMA the proposed changes of the Federation of State Medical Boards to make the FLEX exam a two-part examination. Passage of the first part would be required before entering the second year of postgraduate training. In addition, the NBME certificate, long used as a standard by licensing boards and others, would no longer be recognized for licensure.

It was moved and carried to recommend that the Board of Directors bring to the attention of BOMEX that the Medical Education Committee disagrees strongly with the proposal of the Federation of State Medical Boards to change the method by which physicians become licensed.

It was moved and carried to recommend that ArMA not become a member of the Alliance for Continuing Medical Education.

EXECUTIVE COMMITTEE

The Executive Committee met on November 19, 1982.

It was moved and carried approving the minutes for the October 23, 1982 meeting of the Executive Committee with the following amendment: "The agenda for the 10/23/82 Board of Directors' meeting was received but not reviewed due to lack of time."

The committee received and discussed the invitation extended to the Arizona Council for Senior Citizens dated 11/3 to meet with the committee to explore areas in which ArMA might be of assistance and the November 16 response from Mr. John Burnham declining the invitation. It was the feeling of the members that the matter should not be pursued.

The committee discussed the severe layoff problem in the various areas of the state which has caused many to lose their insurance benefits, and now in some instances would not be able to afford proper medical care. Dr. Bull discussed briefly the steps the Maricopa County Medical Society has taken to assist where possible. It was the consensus of the members that ArMA should immediately contact the county medical societies, state specialty societies, Arizona Hospital Association, county boards of supervisors, the state business association and the labor unions advising that the Association is concerned with the layoff problem throughout the state by virtue of the fact that many of those individuals will, at least for a period of time, be unable to afford proper medical care and inquire as to how the Association and the medical profession as a whole might be able to help in this time of need.

It was moved and carried that ArMA staff immediately prepare a letter to the Arizona Department of Health Services requesting clarification of the October 21, 1982 request from James E. Sarn, M.D. for ArMA's nomination of five physicians to participate in the AHCCCS program and more information and particulars regarding such participation.

Dr. Collins discussed with the members his thoughts on physician announcements, the addresses for which are currently procured through printing companies, and his idea that since ArMA's mailing list was probably the most up-to-date and could now be purchased, we should make it readily available to interested parties.

It was determined by the committee that all county medical societies be advised that the Association's printing department does have current, up-to-date addressing/mailing services available.

The committee went into Executive Session and afterwards the following actions were taken: It was moved and carried to continue the employee Christmas gift program for 1982. It was moved and carried to provide a five percent salary increase for the Executive Vice President and ask him to prepare or obtain the following four items for the next meeting of the Executive Committee: 1) Prepare a job description for the position of the Executive Vice President. 2) Obtain sample employment contracts for the position of Executive Vice President which include a definition of "full-time." 3) Prepare a performance self-evaluation. 4) To prepare a comparative budget analysis of ArMA's salary and employee benefits.

FINANCE COMMITTEE

The Finance Committee met on November 18, 1982.

Following extensive review and debate regarding committee budgets for 1983, the following action was taken: It was moved and carried to recommend to the Board of Directors that the following 1983 committee budgets be approved:

500A	Articles of Incorportion & Bylaws	$ 100.00
500D	Board of Directors	6,000.00
500E	Executive	6,000.00
500F	Finance	500.00
500G	Grievance	100.00
500J	Maternal & Child Health Care	1,500.00
500K	Health Manpower	1,200.00
500L	Legislative	36,000.00
500M	Medical Education	3,500.00
500N	Medical Economics	1,650.00
500O	Environmental Health	600.00
500Q	Professional	4,000.00
500R	Public Relations	15,000.00
500S	Governmental Services	2,000.00
500U	Resident Physician	1,000.00
500V	Ad Hoc	3,000.00
500W	ArMA Auxiliary	1,000.00
500X	Physician's Health	3,500.00
	Total Expenditures	$86,650.00

and that additional contingency funds be earmarked for the Public Relations Committee activities subject to Board of Directors' review and approval.

It was reported that the Finance Committee's recommendation regarding charging for the use of rooms in the Association's building was approved by the Board of Directors. The revised guidelines for the Executive Committee contingency fund were received for information.

A discounted credit card program developed by the Texas Medical Association was reviewed. It was determined to seek more information from the banks before proceeding further.

The next meeting will be held on March 12, 1983 at which time the 1984 budget will be prepared.

PUBLIC RELATIONS COMMITTEE

The Public Relations Committee met on November 20.

After a discussion of the "Health Highlights" program, the committee was polled and voted to cooperate with SamCor in the production of the "Health Highlights" television program.

It was moved and carried that the Public Relations Committee recommends to the Board of Directors that the Arizona Medical Association cooperate with SamCor in the production of "Health Highlights," providing SamCor approves the following points in a letter of agreement: 1) that the Arizona Medical Association have input regarding participants, content, format, structure and research; 2) that this agreement does not preclude the Arizona Medical Association from cooperating with other hospitals or organizations in the production of similar health oriented programs; 3) that both the Arizona Medical Association and SamCor have the option of terminating their agreement after 60 days' notice; 4) that SamCor shall make available to the Arizona Medical Association production facilities for the preparatio of some type of public service announcements; 5) that the Arizona Medical Association receive appropriat credit for its assistance in producing th program in the opening and closing in a form that is acceptable to the Public Relations Committee.

The need for an aggressive public relations program for the Arizona Medical Association was discussed and the committee approved the following proposals: 1) That a series of dinner meetings be held at which representatives of the Association and staff meet with representatives of the media (at the policymaking level) to discuss the issues that are of concern t physicians. Approximately 10-14 eetings would be held in Phoenix th similar meetings to be held in the her 14 counties. The purpose of the nners would be to let the media ow what the medical profession lieves in, why it takes the positions it es, what are its concerns and what it doing about them. The meetings ould also enable physicians to better derstand the positions the media kes.

2. That a media awards program to cognize excellence in medical writing Arizona reports be instituted.

3. That money be available to hire a e-lace writer to prepare medical atures for smaller newspapers, radio d televsion stations in Arizona as well to make medical columns available for use in "house organs" printed by companies doing business in the state of Arizona.

It was estimated that the above activities, along with those already being carried out by the Communications Coordinator, would cost $27,900. The committee proposed that money be drawn from reserves to provide the amount that is over and above the 1983 budget.

The Communications Coordinator was instructed to begin work on a brochure explaining the practice characteristics of physicians and other health care professionals. This would be the third in ArMA's series of patient information brochures, the first two being "How to Cut Your Health Care Costs" and the "Patient-Physician Relationship." The committee believes that a time might come when the Arizona Medical Association would need to seriously consider developing and placing a series of paid media advertisements to foster and reinforce the perception that physicians (MDs) best fulfill all the health care needs of the public. Staff is to research the program being developed by the Monterey County Medical Society in conjunction with the California Medical Association and report on the program at the next Public Relations Committee meeting scheduled for 1 p.m. on Saturday, January 29, 1983. At that meeting, long-range PR goals for the Association are to be discussed.

Conflicts in Medicine

"What I like about you, Doctor, is that you treat me like an equal!

Arizona Pharmaceutical Representatives
*Arizona Pharmaceutical Representative's Association Members
HR — Hospital Representative
July 1982

From time to time we receive inquiries as to names/addresses/phone numbers for detail persons of var pharmaceutical companies. Many of those representatives have joined together and formed what appears to be a active group, Arizona Pharmaceutical Representatives Association, which has published the following list provi helpful information. We are pleased to be able to share this with you in an attempt to make your contact with a partic source somewhat easier.

Company	Representative	Address	Telephor
Abbott	Gail J. Hines*	2531 E. Pebble Beach, Tempe 85282	831-5392
Abbott	John J. Jarzynka*	10815 N. Sundown Drive, Scottsdale 85260	991-0286
Abbott-HR	Victor Rosenshien*	5650 E. Presido, Scottsdale 85253	996-5972
Abbott	Stan White	9101 N. Morning Glory Road, P.V. 85253	991-0703
Adria-HR	Pamela Hart-+*	10416 S. 47th Street, Phoenix 85044	893-2186
Adria	Ken Tyman*	6036 N. 18th Street, Phoenix 85016	266-1133
Alcon	Bob Rickert	2639 N. Champlain, Tempe 85281	946-3190
Alcon	Ed Sepkowski	813 W. Rockwood Drive, Phoenix 85027	869-0421
American Critical Care	William Warner	2938 N. 61st Place, Scottsdale 85251	941-9184
Astra	Rolando Eugenio	8611 N. 45th Drive, Glendale 85302	931-8024
Ayerst	J. Roger Beck*	4102 W. Hearn Road, Phoenix 85023	978-8846
Ayerst	Tom Doyle*	9007 N. Arroya Grande Drive, Phoenix 85028	992-4692
Ayerst	Paul Kaczmarek	3034 W. Angela Drive, Phoenix 85023	942-8162
Ayerst	Bill Roberts	5432 N. 81st Place, Scottsdale 85253	946-1911
Beecham	Peter Bush	1522 E. Southern, Tempe 85282	831-9159
Beecham	Mark Edelman	4121 W. Wood Drive, Phoenix 85029	978-4179
Beecham-HR	A. Derry Poulos	7502 E. Thomas Road, No. 310, Scottsdale 85251	945-9353
Beecham	Robert Sroka	318 E. Highland, Phoenix 85012	274-6881
Berlex	David Crawford*	4439 E. Hidalgo, Phoenix 85040	966-9648
Berlex	Kimberlee Joseph, R.N.*	5810 N. 48th Lane, Glendale 85301	939-1250
Boehringer-Ingelheim	Jim Down	4048 E. Hancock Drive, Phoenix 85028	996-6347
Boehringer-Ingelheim	Doug Giles	649 N. Orange, Mesa 85201	833-1056
Boehringer-Ingelheim	Pierre Thoumsin	4630 E. Thomas Road, No. E30, Phoenix 85018	952-8829
Boots	Michael Hackett	3823 S. Siesta Lane, Tempe 85282	838-7499
Boots	Mark Heimbach	P.O. Box 1050, Carefree 85377	585-4636
Boots	Henry Pharis	Glendale	
Breon	Steve Newman	19112 E. Via De Arboles, Higley 85236	987-3372
Bristal	Mark Albersten*	1530 W. 5th Place, Tempe 85281	967-9116
Bristoe	Liz Christensen	3431 N. 50th Place, Phoenix 85015	840-1389
Bristol-HR	Paul Njaa*	4123 N. 58th Street, Phoenix 85018	945-1921
Bristol	Mark Sandmeir		
Bristol	Susan Sheahan*	8614 E. Plaza Avenue, Scottsdale 85253	949-7464
Bristol	Karen Stigers	610 E. Lexington Place, Tempe 85281	990-2689
Burroughs Wellcome-HR	Colleen Devlin	4158 E. La Creniga Drive, Tucson 85712	326-6760
Burroughs Wellcome	Jim La Brie*	615 W. Cape Royal Lane, Phoenix 85023	866-9518
Burroughs Wellcome	Dave Pulley*	13234 N. 11th Avenue, Phoenix 85029	942-8582
Burroughs Wellcome	Phil Singleton	4130 S. Brill Avenue, Apt. V257, Tempe 85282	894-2479
Burroughs Wellcome	Don Wegworth*	3432 W. Calavar Road. Phoenix 85023	993-0538
Carnrick	Marty Johnson*	12607 N. 35th Place, Phoenix 85032	971-7562
Ciba	Robert Gearhart*	15436 N. 2nd Avenue, Phoenix 85023	942-7654
Ciba	Bob Quinn	11036 N. 28th Drive, Phoenix 85029	993-1669
Ciba	John Whaley	5208 E. Hillery Lane, P.V. 85253	996-5952
Dista	Don Baron	6801 E. Camelback Road, No. 0-302, Scottsdale 85251	947-1939
Dista	John Cerniglia	7944 E. Redfield Road, Scottsdale 85254	948-2256
Dista	Mary Stock	8502 N. Central Avenue, No. 13, Phoenix 85020	944-5270
Dorsey	Wally Mohr*	P.O. Box 4786, Scottsdale 85258	948-9420

rsey	Ed Sykes*	P.O. Box 25848, Tempe 85282	831-0639
do	Judy Flint*	2241 S. El Marina, Mesa 85202	839-7877
do	Bob Host*	2382 W. Waltann Lane, Phoenix 85023	993-0759
do	Dave Lauersdorf*	3002 N. Iowa, Chandler 85224	838-8231
do	Steve Schnityer*	1713 W. Chilton Street, Chandler 85224	834-6304
ous Corp.	Jeanne Laflen*	8408 E. Angus Drive, Scottsdale 85251	994-8896
ming	Robert Gilliland	6212 N. 41st Avenue, Phoenix 85019	841-6330
nt	Bob Madrid*	7004 W. Corrine Drive, Peoria 85345	979-8979
igy-HR	Ronald P. Long*	5013 E. Gelding Drive, Scottsdale 85254	996-2317
igy	Rodger J. Ponczak	3723 W. Palmaire Drive, Phoenix 85021	841-7434
igy	Alex C. Walker	4302 E. Weldon, Phoenix 85018	955-3983
xo	Susan Arinno*	540 N. May, No. 2063, Mesa 85201	833-5677
xo	Howard Balch*	17213 N. 36th Avenue, Glendale 85308	978-5325
xo	Bob Truxell*	6102 E. Gelding Drive, Scottsdale 85254	948-8384
xo, Inc.	Paul Zaic*	4615 E. Sharon, Phoenix 85032	996-5027
echst	Noreen Barrett*	8225 N. Central Avenue, No. 5, Phoenix 85020	944-8935
echst-HR	Lynn Larson*	5059 N. 83rd Street, Scottsdale 85253	945-4798
echst	Dan Possante*	15436 N. 52nd Place, Scottsdale 85253	867-8814
llister-Steer	Jim Ali*	3015 E. Larkspur, Phoenix 85032	992-3364
me Health Care Resources	Judy K. Pedersen*	1249 E. Palacin Drive, Phoenix 85014	265-4273
ric	Bruce Miller*	2220 W. Indianola, Phoenix 85015	277-6922
. Medication Sys., Ltd.	Bill Stanley	2609 N. Jay Street, Chandler 85224	899-1861
s	Richard Barnes-Allan*	1415 E. Earll Drive, Phoenix 85014	274-7402
s	Joseph Fendler*	2244 W. Kiowa Circle, Mesa 85202	838-4630
y	Frank McElmoyl*	10112 E. Paradise Drive, Scottsdale 85260	948-0037
oll	Sandra L. Blair, R.N.*	4150 E. Cactus Road, No. 302, Phoenix 85032	953-1743
oll	Patricia Diane Fitch*	3811 W. Royal Palm Road, Phoenix 85021	973-4892
emers-Urban	Charles Hansen	2039 E. Yale, Tempe 85283	839-6367
emers-Urban	John Rosinsky	716 E. Paradise Lane, Phoenix 85032	
derle	Bill Clees	6836 E. Cheery Lynn, Scottsdale 85251	941-5218
derle	Richard Dickinson*	5016 W. ShangriLa Road, Glendale 85304	934-1845
derle	Marie S. Kulasa	4338 E. Grandview Road, Phoenix 85032	971-4161
derle	Mary McGrovern	4001 W. Palomino Road, Phoenix 85019	841-8085
derle	Bill Shewnam	6270 N. 78th Street, No. 323, Scottsdale 85253	991-7133
ly	J. G. Chesney, Jr.	1207 E. Harbor View Drive, Tempe 85283	839-0627
ly	Jerome S. Factor	7698 Pleasant Run, Scottsdale 85258	998-5615
ly	Bob Gorman	10828 N. Biltmore Drive, No. 152, Phoenix 85029	863-0190
ly	Lee Unterreiner	3143 E. Malapai Drive, Phoenix 85028	992-1429
ly	Jim Vernon	2078 La Jolla Drive, Tempe 85282	831-5514
ly	Leonard Wallmueller	128 E. Royal Palm Road, Phoenix 85020	943-0517
arion	Rowena Elick*	1058 E. 8th Street, Mesa 85203	898-1006
arion	Bruce Evers	4237 W. Seldon, Phoenix 85021	937-7044
arion	Tracy Hannan	11248 N. Biltmore, Phoenix 85029	993-6544
arion-HR	Jerry Herring	116 E. Joan De Arc, Phoenix 85022	942-4323
arion	Greg Watkins	2272 E. Mercer, Phoenix 85028	992-2459
cNeil-HR	Glenn Bliarosky	317 W. Box Elder Place, Chandler 85224	892-7070
cNeil	Rand Harris*	1808-1 E. Haywood Avenue, Phoenix 85020	944-5739
cNeil	Mary Scandling	2312 W. Lindner, No. 38, Mesa 85202	838-1217
cNeil	John B. Wilson	1923 S. Henkel Circle, Mesa 85202	838-6069
cNeil	Tom Zagar*	4402 N. 79th Drive, Phoenix 85033	849-5151
ead Johnson	Bill Cutler*	2460 W. Mandalay Lane, Phoenix 85023	942-0176
ead Johnson	Charlie Geisler*	9827 N. 65th Place, Scottsdale 85253	991-2553
ead Johnson	Diana Grantham	9437 E. Calle De Valle, Pinnacle Peak 85255	585-0746
ead Johnson	Kim Groh*	15627 N. 49th Place, Scottsdale 85254	971-9235
ead Johnson	Mary Williams*	6115 E. Aster, Scottsdale 85254	998-4858
ead Johnson	Mike Fulcher	925 N. 79th Street, Scottsdale 85257	941-0168
ead Johnson	Jim Grigy	2461 W. Crocus Drive, Phoenix 85023	866-0593
ead Johnson	John R. Herrick	4918 E. Corrine Drive, Scottsdale 85254	996-6837
ead Johnson	Evangeline Song	8225 E. Rose Lane, Scottsdale 85253	948-8869
erck	Karen De LaTorre	1516 E. Earll Drive, Phoenix 85014	279-9205
erck	Lisa Dittemore	6022 E. Crocus Drive, Scottsdale 85254	998-7068
erck	Barney Durbin	8445 N. 23rd Avenue, Phoenix 85021	995-5628
erck-HR	Steve Gilbert	2147 W. Orange, Mesa 85202	897-6012
erck	Dean E. Hilliker	6123 W. Fairmont, Phoenix 85033	846-4098

Merck	Santo J. La Corte	635 E. Canterbury Lane, Phoenix 85022	863-4133
Merck	Sandy Maxey	2118 S. Paseo Loma, Mesa 85202	839-0227
Merck	Dave McKee	14609 N. 28th Place, Phoenix 85032	992-6733
Merck	Jerry Pies	401 E. Carson Drive, Tempe 85282	897-0961
Merck	Joseph Powell, Jr.	Star Route 1, Box 565, Cave Creek 85331	488-9492
Merck-HR	Gary W. Prigge	6420 N. 14th Place, Phoenix 85014	277-0652
Merck	Ernest Sandoval	2060 E. Ellis Drive, Tempe 85281	839-0331
Merrell-Dow	Bill Bullock*	3301 E. Roveen Avenue, Phoenix 85032	992-4376
Merrell-Dow	Dave Duncan*	9052 N. 16th Drive, Phoenix 85021	943-5915
Merrell-Dow	Butch Ehrlich*	9815 N. 108th Street, Scottsdale 85259	948-2262
Merrell-Dow	Bill Marcotte*	8558 E. Via De Viva, Scottsdale 85258	948-2588
Merrell-Dow-HR	Dave Price	1330 W. Morningview Drive, Tucson 85704	742-3055
Moles	Cuck Rozelle	7368 Calle Lugo, Tucson 85710	298-8537
Mites	Bill Smith*	3411 Carriage Lane Circle, Chandler 85224	897-7648
Miles	David White*	9013 N. 83rd Place, Scottsdale 85258	998-4061
Mission	Jeff Schweizer	2035 E. Rice Drive, Tempe 85283	831-0983
National Health Labs	Virginia Griggs*	8526 E. San Daniel, Scottsdale 85258	991-5021
Norwich-Eaton	Bob King*	3623 W. Mission Lane, Phoenix 85021	973-5378
Norwick-Eaton	Paul Pallanich*	3216 W. Crocus Drive, Phoenix 85023	942-3094
Norwich-Eaton	Beth Parsons, R.N.*	8652 E. San Rafael, Scottsdale 85258	991-8531
N. M. L. Labs	Steve Racioppi	11635 N. 27th Street, Phoenix 85028	971-1705
Organon	Pat Kilbane*	326 E. Pierson Avenue, Phoenix 85012	265-9514
Ortho	Susan Hesterberg	6314 E. Gelding Drive, Phoenix 85054	998-4939
Ortho	Steven Tufts	8436 N. 18th Street, Phoenix 85020	997-8158
Ortho	Don Van Nuys*	4601 N. 43rd Street, Phoenix 85018	956-4081
Ortho	Tomi Weaver	1345 East Missouri, Phoenix 85014	274-6561
Parke-Davis	Don Beardsley*	8325 E. Angus Drive, Scottsdale 85251	945-9269
Parke-Davis	Larry Edler	14020 N. 39th Avenue, Phoenix 85023	938-2205
Parke-Davis	Robert Greco	2201 W. Keating, Mesa 85202	839-3984
Parke-Davis	Beverly Hedrick*	8225 N. Central Avenue, No. 32, Phoenix 85020	943-6732
Parke-Davis	Bill Mehok*	3920 W. Eva Street, Phoenix 85021	937-1086
Parke-Davis	Jim Moody*	2128 E. Knoll Circle, Mesa 85202	969-5609
Parke-Davis	Larry Wintrey		
Pennwalt Labs	Jim Merrill	417 West Santa Cruz, Tempe 85282	968-4847
Pennwalt Labs	Marshall Willson	3743 West Cholla, Phoenix 85029	978-8393
Pfizer	Carl W. Arendt	5149 N. Invergordon Road, P.V. 85253	947-6177
Pfizer	Dave Fleming	6901 Paradise Parkway, Scottsdale 85251	945-8362
Pfizer	Gary Hintz	9820 N. 68th Street, Scottsdale 85253	991-1812
Pfizer	Robert Johns	4114 W. Hartfield, Glendale 85308	938-3546
Pfizer	Laurie Myler	8222 N. 19th Avenue, Phoenix 85021	864-0860
Pfizer	Sabina Schauer	4030 N. 59th Avenue, Phoenix 85018	994-8477
Pfizer	John Turlip	4015 E. Desert Cove, Phoenix 85028	996-3404
Pharmacia	Charles E. Hickey	4602 E. P.V.Pkwy, N. No.C-224 Phoenix, 85032	996-6173
Proctor and Gamble	Ray Hoffman	5632 E. Aster Drive, Scottsdale 85254	991-0785
Purdue Frederick	Dick Isquierdo	7716 West Elm Street, Phoenix 85032	846-9643
Purdue Frederick	Ned Schneidewind*	3621 E. Kingler Spring Road, Tucson 85718	
Reed and Carnrick-HR	Robert Carney*	3307 W. Vogel, Phoenix 85012	993-4660
Reed and Carnrick	John A. Jordan*	2501 East Dahlia, Phoenix 85032	971-7788
Riker	Charlie Thomas	1052 South Robin Lane, Mesa 85204	892-5819
Robins	Joe De Francisco	1805 East Alameda, Tempe 85282	839-6635
Robins	Douglas Haertl	14828 N. 2nd Place, Phoenix 85022	866-7215
Robins	Doral Hessman	4613 South Oak Street, Tempe 85282	839-9038
Robins	Bob Rondo	14420 N. 58th Street, Scottsdale 85254	966-8153
Robins	Tony Stoll	2439 West Kiowa Avenue, Mesa 85202	839-8970
Roche-HR	Bill Calvin*	3347 W. Mountain View Road, Phoenix 85021	942-0663
Roche	Bill Hodge	8225 N. Central, No. 45, Phoenix 85020	997-9973
Roche	Ted Nakagawa*	4522 W. Butler Drive, Glendale 85302	934-7572
Roche	John Pajerski	8116 La Rosa Drive, Tempe 85284	831-9542
Roche	Lee Renner*	1916 E. Manhatton Drive, Tempe 85282	839-6041
Rocky Mountain Pharmacal	Brien Butler	1236 E. Northern Avenue, Phoenix 85020	277-7611
Roerig	Bob Arliskas	9002 N. 52nd Drive, Glendale 85302	937-9019
Roerig	James Besse	4444 E. Paradis Village Pkwy., Phoenix 85032	953-3482
Roerig-HR	Jack Goshert	4503 W. Brill Lane, Glendale 85301	937-4527
Roerig	Mike Widdows	11030 N. 35th Street, Phoenix 85028	996-1553
Rorer	Ron Iverson	1737 West Carol, Mesa 85202	962-4374
Rorer	Paul Liewer*	4444 N. 7th Avenue, Phoenix 85013	277-8620
Rorer	Jean McChesney	4421 W. Keating Circle, Glendale 85308	938-9199
Rorer	Bill Wilkenson	14450 N. 62nd Place, Scottsdale 85254	998-8420

oss	Judy Beckmark	2228 E. Lawrence Road, Phoenix 85016	274-5410
owell	Jack Green*	6349 N. 78th Street, No. 75, Scottsdale 85253	998-2231
oss	Dale Hrovat	1511 West Plana, Mesa 85202	838-7041
oss	Judy Kittoe	2725 East Louise, Phoenix 85032	971-1405
oss	Dave Stewart	810 East 9th Street, Mesa 85203	969-9981
andoz	John Burton	21 East Fillmore, Tempe 85281	994-5260
andoz	Bitsann Herman	6241 South Kenwood, Tempe 85282	838-6527
andoz	Valerie M. Retter	4425 N. 78th Street, No. 250-B, Scottsdale 85251	947-0665
andoz-HR	Bill Veit	5209 E. Everett Drive, Scottsdale 85254	966-8769
. B. Saunders Co.	Wallace Pennington	4324 W. Garden Drive, Glendale 85304	978-8014
avage	Sandi Lawrence*	11440 N. 66th Street, Scottsdale 85253	948-1237
chering	Tom Scott*	8374 San Sebastian Drive, Scottsdale 85258	
earle	Gary Bates	7419 E. Ironwood Court, Scottsdale 85258	998-3581
earle	Charles Bristol*	10119 Pineaire Drive, Sun City 85351	977-3300
earle	Rod Grimes*	4201 E. Camelback Road, No. 45, Phoenix 85018	952-1934
earle	Karen Struble Cunningham*	1124 E. Grandview Road, Phoenix 85022	942-4862
mith, Kline & French	Roy Berry	1230 Laguna Drive, Tempe 85281	838-1700
mith, Kline & French-HR	Mike Dwyer*	6702 E. Cypress, Scottsdale 85257	949-5440
mith, Kline & French	Karen Hamby	1755 Colt, Chandler 85224	899-0274
mith, Kline & French	John Madrid*	4418 W. Larkspur Drive, Glendale 85304	938-0373
mith, Kline & French	Pat McNulty	5225 E. Thomas Road, No. 14, Phoenix 85018	952-2422
mith, Kline & French-HR	Ricardo Orrantia	280 Straford Circle, Chandler 85224	838-5983
quibb-HR	Elbert Bridgman*	12007 S. Tonopah Drive, Phoenix 85044	893-9713
quibb	Dennis C. Kalsow	1327 E. Carmen Street, Tempe 85283	968-3310
quibb	Bob Lightfoot*	11210 N. Third Street, Scottsdale 85260	948-2697
quibb	Susan Wilkinson	4235 N. 45th Street, Phoenix 85018	952-0200
tuart	Kim Crain	11026 N. 28th Drive, No. 25, Phoenix 85029	993-3442
tuart	Cynthia Drasler	12838 N. P.V. Pkwy. No. 230, Phoenix 85032	953-1487
tuart	Cheryle Walters	2739 W. Michigan Avenue, Phoenix 85023	582-3641
tuart	Dave Wolford	2527 East Impala, Mesa 85204	892-7557
yntex	Jennifer Bettis	5401 West Sheena, Glendale 85306	843-3148
yntex	Donna Broughton		839-5035
yntex	Joseph Hill	4606 South Dorsey Lane, Tempe 85282	838-1915
yntex	William Katula	6501 W. Reade Avenue, Glendale 85301	846-8194
yntex	John Mode	18037 N. 45th Avenue, Gledale 85308	978-1890
pjohn	Francis V. Brown	4707 N. 82nd Avenue, Phoenix 85033	846-2404
pjohn	Jim D. Hageman	314 W. Nopal Place, Chandler 85224	892-6244
pjohn	Paul Joly*	15870 E. Trevino Drive, Fountain Hills 85268	837-9370
pjohn	John R. Lugo	8455 E. San Marino Drive, Scottsdale 85258	998-8117
pjohn	Jamie Whiteman	16419 N. 64th Place, Scottsdale 85254	998-5322
pjohn	Craig Woodhouse	10419-2 N. 10th Place, Phoenix 85020	944-9275
SV	Nick Day	2702 S. Yucca Circle, Mesa 85202	897-0273
SV	Gary Gardner*	P. O. Box 1052, Scottsdale 85252	946-2444
SV	Steve Shore	3442 E. Everett Drive, Phoenix 85032	971-2369
allace	Carol Daugherty*	2625 E. Christy Drive, Phoenix 85028	971-2051
allace	Janelle Kennedy*	16418 N. 49th Avenue, Glendale 85306	978-6112
allace	Merrill Sutton*	2609 W. Southern, No. 187, Tempe 85282	894-6718
Westwood	Michael Boyd*	1607 E. Gable, Mesa 85204	892-1139
Westwood	Michelle Schwelzer-Gavin*	2325 E. Bishop Drive, Tempe 85282	968-1589
Winthrop	Steve Rost	4222 East Edgewood Avenue, Meas 85206	832-1580
Winthrop	Jack Stapleton*	8913 N. 80th Way, Scottsdale 85258	991-6868
Winthrop-HR	Marty Winokur*	4525 N. 17th Avenue, Phoenix 85015	277-5247
Wyeth	Art Ashenden	4618 E. Paradise Lane, Phoenix 85032	867-4562
Wyeth	Jerry Fogarty	2217 N. 74th Street, Scottsdale 85257	941-1373
Wyeth	Kevin McPolin		
Wyeth	Howard Miner*	6839 E. Sunnyvale Road, Paradise Valley 85253	948-6883
Wyeth	Ron Pillar	2429 E. Loyala Drive, Tempe 85282	838-1865
Wyeth	Tom Raubenheiner	17221 N. Eagle Court, Glendale 85308	938-2153
Amfac	Rick Porter*	4921 East McDowell Road, Phoenix 85008	273-7365
Bergen-Brunswig	Bill Tortell*	2101 West Roosevelt, Phoenix 85009	258-7171
Bindley Western	Bill Gibbons	720 North 7th Avenue, Phoenix 85007	258-7398
Mckesson-Robbins	Frank Taylor	2323 North 27th Avenue, Phoenix 85009	272-7911

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
Lung Association
Walter O. Boswell Memorial Hospital
Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St Joseph's Hospital & Medical Center, Phoenix
St Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical
Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

JANUARY

Infantile Autism
January 15. John C. Lincoln Hospital, Phoenix. Sponsor: John C. Lincoln Hospital, Arizona Medical Association, and Samuel Gompers Memorial Rehabilitation Center, Inc. Contact. Gompers Memorial Rehabilitation Center, Inc., O.T. Services, 7211 North Seventh Street, Phoenix, AZ 85020. Approved for 5 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
January 18-20. John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, Az Affiliate American Heart Assn. and ArMA. Contact: Beverly Richter, Arizona Chapter, American College of Emergency Physicians, 810 W. Bethany Home Road, Phoenix, AZ 85013. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Current Perspectives IV: Newer Imaging Techniques
January 19. ArMA Offices, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 West Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmembers \$20). Approved for 3½ hours of Category 1 credit.

Skeletal Fixation of Fractures
January 21-22. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 11 hours Category 1 credit.

Endocrinology
January 22. U. of A. Health Sciences Center. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 8 hours of Category 1 credit.

Computer Applications in Critical Care Medicine
January 27-28. Registry Resort, Scottsdale. Sponsor: Phoenix Baptist Hospital and Medical Center. Contact: Sharon Luczu, Allied Health Coordinator, Phoenix Baptist Hospital and Medical Center, 6025 N. 20th Ave., Phoenix, Arizona. Approved for 12 hours of Category 1 credit.

FEBRUARY

Third Annual Arizona ACEP Symposium
February 3-5, 1983. Red Lion Resort, Scottsdale. Sponsor: Arizona Chapter American College of Emergency Physicians. Contact: Beverly Richter, AZ ACEP, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 18 hours of Category 1 credit.

Musculoskeletal Problems
February 12. Ramada Safari Resort. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 8 hours of Category 1 credit.

Fifth Annual International Cataract Surgery Symposium
February 14-16. The Alamos Resort, Scottsdale, Arizona. Sponsor and Contact: The Eye Foundation, 525 N. 18th Street, Ste 504, Phoenix, Arizona 85006.

Pediatric Update 1983
February 14-17. La Posada Resort. Sponsor: St. Joseph's Hospital and Medical Center, and Phoenix Children's Hospital (a Division of Good Samaritan Medical Center). Contact: Ronald A. Christensen, M.D., 1117 East Willetta, Phoenix, Arizona 85006. Approved for 16 hours of Category 1 credit.

Current Perspectives V: Dilemmas of a Teenager
February 16. ArMA Offices. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 West Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmembers \$20) Approved for 3½ hours of Category 1 credit.

Neurological Symptoms
February 17-19. Arizona Inn, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Cen Tucson, AZ 85724. Approved for hour pe hour Category 1 credit.

9th Annual Frontiers in Ophthalmology
February 17-19. Mountain Shadows Resc Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Christine Campbell, Medical Meeting Planner, St. Luke's Medical Center, 525 North 19th Street, Phoenix, Arizona 85006. Approved for hc per hour Category 1 credit.

Conference on Medical Aspects of Boxin
February 18, 1983. Caesar's Palace Hotel Las Vegas. Sponsor: American Medical Association and Association of Ringside Physicians. Contact: Dept. of Environmental, Public and Occupational Health, American Medical Association, 5 North Dearborn Street, Chicago, Illinois 60610. Approved for 6 hours of Category credit.

Sixteenth Annual Southwestern Clinical Pharmacy Seminar: Advances in Infectio Disease Pharmacotherapy
February 18-20. Ramada Inn, Tucson. Sponsor: U. of A. College of Pharmacy. Contact: Jack R. Arndt, Ph.D., College of Pharmacy, U. of A., Tucson. 9 hours of Category 1 credit have been applied for.

Ambulatory Electrocardiography: Clinica Applications, Methodology and Interpretation
February 18-20. La Posada Resort, Scottsdale. Sponsor: International Medic Education Corp. Contact: International Medical Education Corp, 64 Inverness Drive East, Englewood, Colorado 80112. Approved for 13 hours of Category 1 cre

The Tenth Annual Barrow Neurological Symposium
February 24-26. La Posada Resort, Phoenix. Sponsor: St. Joseph's Hospital and Medical Center/Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., Barrow Neurological Institute, 350 West Thomas Road, Phoenix, Arizona 85013. Approved for hour per hour Category 1 credit.

Anesthesia for the 80's, 9th Annual Scientific Meeting
February 25-27. Doubletree Inn, Scottsda Sponsor: University of Arizona College o Medicine, Dept. of Anes. and Arizona Society of Anesthesiologists. Contact: Beverly Richter, Arizona Society of Anesthesiologists, 810 West Bethany Hon Road, Phoenix, Arizona 85013. Approved for 15.25 hours of Category 1 credit.

ergency Care Update -V
ruary 28-March 2. Arizona Health
ences Center, Tucson. Sponsor: U. of A.
lege of Medicine. Contact: Office of
ntinuing Medical Education, U. of A.
alth Sciences Center, Tucson, AZ 85724.
proved for hour per hour Category 1
dit.

MARCH

anges & Controversies in Pediatrics
rch 3-6. Marriott Hotel, Tucson.
onsor: U. of A. College of Medicine.
ntact: Office of Continuing Medical
ucation, U. of A. Health Sciences Center,
cson, AZ 85724. Approved for hour per
ur Category 1 credit.

th Annual Mid-Winter
mposium in OB/GYN
rch 9-11. Scottsdale Hilton Hotel,
ottsdale. Sponsor: Marciopa County
neral Hospital and Phoenix OB/GYN
ciety. Contact: Secretary, Phoenix
/GYN Society, 3412 N. Fourth Ave.
oenix, Arizona 85013. Approved for 14
urs of Category 1 credit.

Annual Sports Medicine Symposium
rch 10-12. Arizona Health Sciences
nter, Tucson. Sponsor: U. of A. College
Medicine. Contact: Office of Continuing
dical Education, U. of A. Health
ences Center, Tucson, AZ 85724.
proved for hour per hour Category 1
dit.

th Annual Symposium on Current
ncepts in the Management of Chronic
n Syndromes
rch 12-13. Scottsdale Hilton Resort.
onsor: Maricopa Medical Center.
ntact: George Wallace M, D., Interim
airman, Dept. of Anes., Director, Pain
nic, Maricopa Medical Center, 2601 East
osevelt, Phoenix, AZ 85008. Approved
hour per hour Category 1 credit.

rrent Perspective VI:
wer Aspects of VD
rch 16. ArMA Offices, Phoenix. Sponsor:
izona Medical Association. Contact:
ki Mertz, ArMA, 810 West Bethany
me Road, Phoenix, Arizona 85013.
embers no charge—nonmembers $20).
proved for 3½ hours of Category 1
edit.

dical and Surgical Management of the
amed Eye
rch 24-26. Grand Canyon, Arizona.
onsor: University of Arizona College of
dicine. Contact: Office of Continuing
dical Education, University of Arizona
alth Sciences Center, Tucson, AZ 85724.
proved for 15½ hours of Category 1
dit.

FLEXIBLE SIGMOIDOSCOPY
A Useful Tool in Colonic Disease

Saturday, February 12, 1983
Phoenix Baptist Hospital and Medical Center

This one day symposium will consist of a morning lecture series on diverticular and inflammatory bowel diseases, neoplasia, irritable bowel syndrome, pathological and radiological considerations and practical aspects of utilizing the flexible sigmoidoscope. The afternoon session will provide a clinical workshop with both models and patients.

Registration fee is $75.00 and the program has been approved for 6 hours of Category 1 CME credit.

For additional information contact:

Patty Askew, Library/CME Coordinator
Phoenix Baptist Hospital and Medical Center
6025 North 20th Avenue
Phoenix, Arizona 85015
(602) 249-0212, extension 5809

Arizona Chest Symposium
March 24-26. Doubletree Hotel, Tucson. Sponsor: U. of A. Health Sciences Center. Contact: Sandy Younker, R.N., Chest and Allergy Clinic, Tucson Medical Center, P.O. Box 42195, Tucson, AZ 85733. Approved for hour per hour Category 1 credit.

Dermatology
March 26. Arizona Health Sciences Center. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

Dean's Clinical Rounds
March 30. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

33rd ANNUAL COURSE FOR PHYSICIANS IN FAMILY PRACTICE

March 9-11, 1983

For the 33rd consecutive year, Mount Zion Hospital and Medical Center presents this postgraduate course designed for physicians in family and general practice.

To be held at Mount Zion Hospital and Medical Center, San Francisco, on Wednesday through Friday morning, March 9, 10 & 11, 1983.

Co-Chairmen: Rene Bine, Jr., M.D.
James A. Davis, M.D.

Tuition: $195.00

For more information, contact:

Office of Continuing Education
Mount Zion Hospital and
Medical Center
P.O. Box 7921
San Francisco, CA 94120
415/567-6600 Ext. 2404

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Indian Hospital,
2nd Tues.— Maricopa County Hospital,
3rd Tues.—Good Samaritan Hospital,
4th Tues.—St. Joseph's Hospital.
Sponsor: Maricopa Medical Center (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Ravi Koopot, M.D.

Clinical Conference Cardiovascular Medicine
Third Tues., 5:15 p.m., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff

Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.

Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.

Surgical Department CME
4th Friday, 7 a m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 86016 Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 8571 Contact: Eric G. Ramsay, M.D. Approve for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Se and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. R

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm.

Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:0 p.m., T-8 Conference Rm.

Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Famil Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

t Tumor Gyn Conference
Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
icine Grand Rounds
kly, Friday, 8:00-9:00 a.m.,
hitheater.
rology Grand Rounds
kly, Friday, 12:00-1:00 p.m.,
hitheater.
chiatry Grand Rounds
kly, Friday, 11:00-12:00 noon,
cation Bldg. West.

KINO COMMUNITY HOSPITAL, (THMEP)

E. Ajo Way, Tucson, AZ. 85713.
tact: Eric C. Ramsay, M.D., Approved
Category 1 credit.
gical Conference
kly, Monday 8:00 a.m., Contact:
ischer, M.D.
ical Conference
kly, 12:30 p.m., Contact: Chief Medical
dent.
GYN Pathology Conference
kly, Thursday, 1:30 p.m., Contact: Jay
hman, M.D.
chiatry Journal Club
kly, Thursday, 12 Noon, Contact: Jose
iago, M.D.

MARYVALE SAMARITAN HOSPITAL

W. Campbell Ave., Phoenix, AZ 85008
tinuing Medical Education Program
& 4th Wednesday, 12:30 p.m.,
erence Rms.

or Board
3rd Mondays, 12-1 p.m., Medical
erence Rms.

MARICOPA MEDICAL CENTER

E. Roosevelt, Phoenix, AZ 85008.
tact: Leonard Tamsky, M.D.
sthesiology Morbidity & Mortality
ference
ekly, Mondays, 2:45 p.m., Santa Cruz
m, Contact: George Wallace, M.D.
licine Conference
y 12-1 p.m., Contact: S. Schaffner, M.D.
st Surgery Conference
ekly, Mondays, 1:30 p.m.,
ta Cruz Room.
natology Conference
Tuesday, 1:00 p.m., Contact:
Koppenbrink, M.D.
GYN Dept. Grand Rounds
ekly, Tuesday, 12 Noon,
ta Cruz Room.
tetrical Problem Conference
ekly, Tuesday, 7:30 a.m., Yavapai Rm.
hopedic Conference
ekly, Tuesday, 7:30 a.m.,
ta Cruz Room.
iatric Grand Rounds
Tuesday, 7:30-8:30 a.m., Contact:
ert Ganelin, M.D.

Urology Discharge Planning Conference
Weekly, Tuesday, 11:30 a.m., Station 42.
Hand Surgery Conference
Weekly, Wednesday, 7:30 a.m.,
Santa Cruz Room.
Neurosurgery Discharge Planning
Weekly, Wednesday, 1:30 p.m., Station 42.
OB/Neonatology Seminar
Weekly, Wednesday, 7:30 a.m., Yavapai Rm.
Clinical Psychiatric Conference
Weekly, Wednesday, 11-12 p.m., Mental
Health Annex, Rm. 1346.
Surgery Conference
Weekly, Wednesday, 7-8 a.m.,
Surgical Dept.
Current Concepts in Medicine & Surgery
1st Thursday, 1 p.m., Dr. Hospital Class
Rm., Contact: Dr. Tamsky.
Cardiology Conference
Weekly, Thursday, 2 p.m.,
Santa Cruz Room.
OB/GYN Resident Conference
Weekly,Thursday, 12 p.m., Yavapai Rm.
GYN Endocrine Seminar
1st & 3rd Friday, 12:30 p.m.,
Santa Cruz Room.
OB/GYN Surgical Pathology Conf.
Weekly, Friday, 7:30 a.m., Yavapai Rm.
Orthopedic X-Ray Conference
Weekly, Friday, 7:30 a.m.,
Santa Cruz Room.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for
Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th floor
auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th floor auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D.,
Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.
Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference Rm.
A, Contact: N. Wendell Todd, M.D.
Family Practice/Emergency Room
Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf.
Rm. A, Contact: Drs. L. Fairbanks & E.Y.
Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for
Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva
Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm.,
Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm.
Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251.
Contact: W. S. Williams, M.D., Approved for
Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ
85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m.,
1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric
Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m.,
Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact:
J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric
Department.
Medical Grand Rounds
Weekly, Wednesday, 8 a.m., 1st Floor Conf.
Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st floor Conf.
Rm.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric
Department.

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
3rd Tuesday, 12 p.m., Contact: Wm. Monteforte.

Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 p.m., Contact: Kim Sowards.
Kim Sowards.

Current Concepts in Medicine
Weekly, Tuesday, 12 p.m., Auditorium.

Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 p.m., Contact: S. Salmon, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ, Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.

Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.

Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.

Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.

Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.

Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.

Psychiatry Conference
3rd Thursday, 7 a.m., Auditorium.

Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.

Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.

Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.

Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.

Emergency Medicine Lectures
Weekly, Thursday, 8 a.m., Century Rm. A.

Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.

Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.

Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.

Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.

Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.

Perinatal Conference
2nd Monday, 7:30 p.m., Contact: J. Lohman, M.D.

Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact. Howard Winkler, M.D.

Surgical Dept. Conference
2nd Monday, 12 Noon, Contact: C. Peter Crowe, Jr., M.D.

Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.

Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact:
B. Friedman, M.D.

Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.

Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.

Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.

G—I Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.

OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.

OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact Dr. Russo.

Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact Dr. Mertz & Dr. Lanard.

GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T- Contact: Dr. Sanowski.

GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T- Contact: Dr. Sanowski.

Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 41

Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext 388.

Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contac Dr. Habib.

Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.

Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm T-5, Contact: Dr. Zeller.

Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.

Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.

Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIA MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITA & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved f Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

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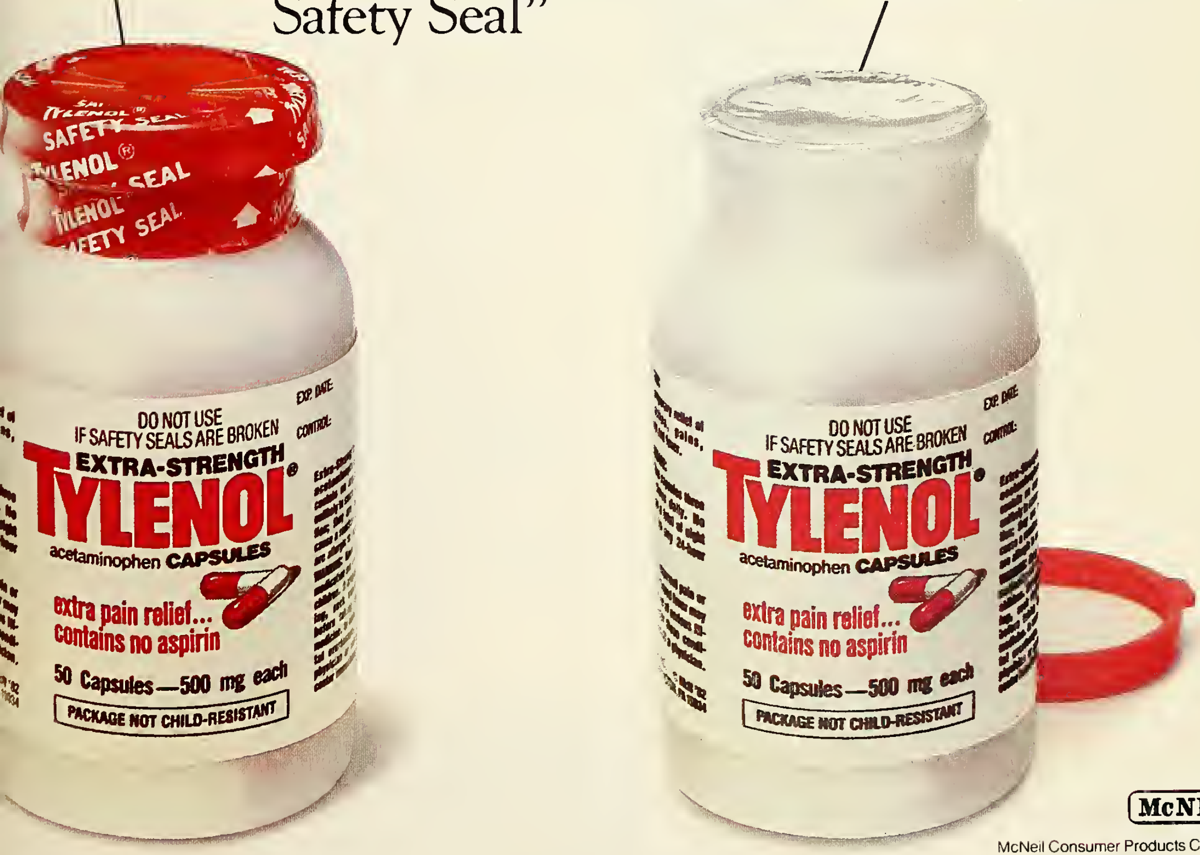
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Bactrim™ attacks the
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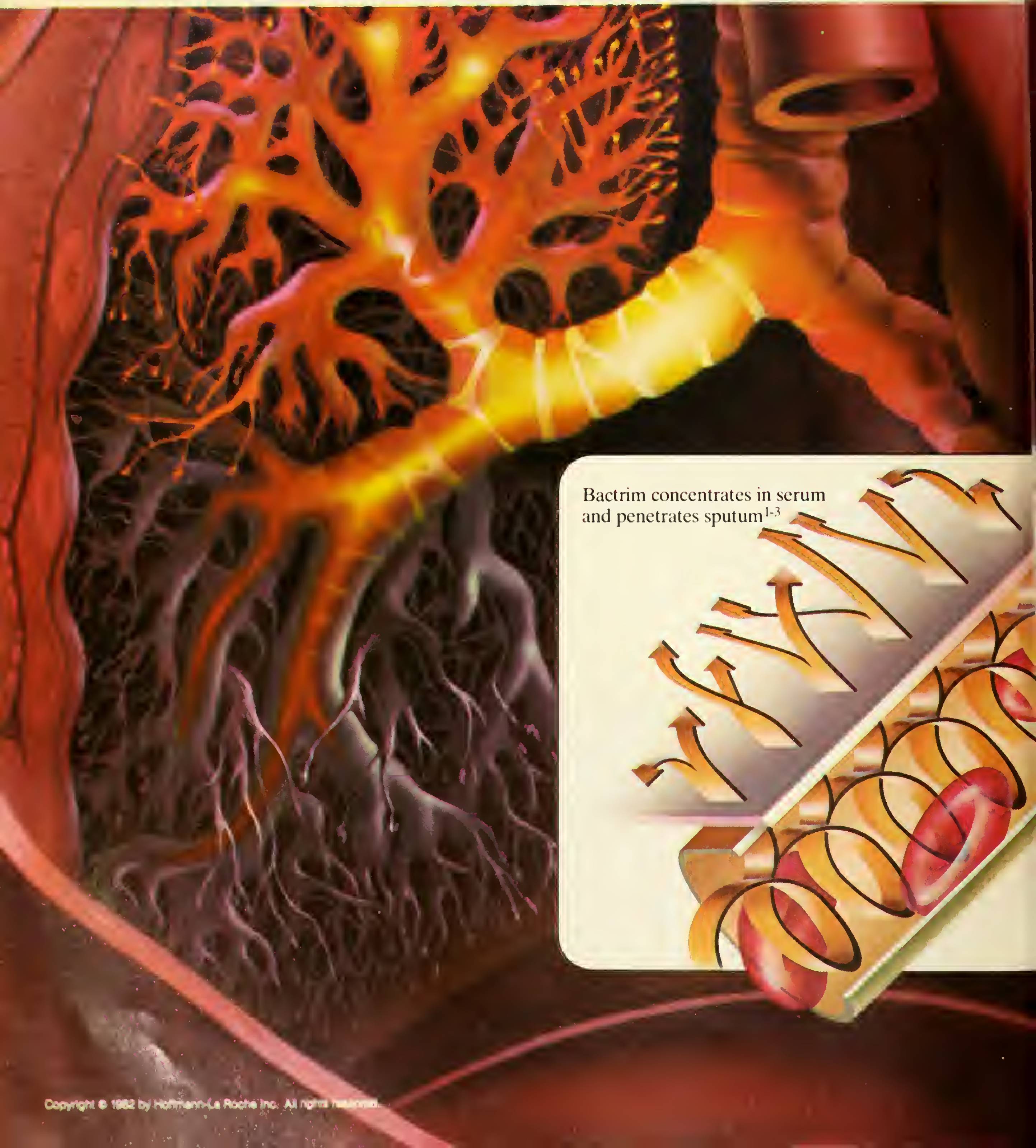
# in acute exacerbations



Bactrim concentrates in serum and penetrates sputum[1-3]

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najor pathogens
f chronic bronchitis*

Bactrim clears sputum of susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.[4,5] One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.[5]

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.[6]

Bactrim reduces coughing and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.[7-9] Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

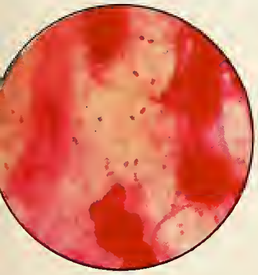
Bactrim also proved more effective than tetracyclines in 10 clinical trials involving nearly 700 patients.[10] Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: 1. Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother I/2*:1105-1106, 1971. **2.** Jordan GW *et al: Can Med Assoc J 112*:91S-95S, Jun 14, 1975. **3.** Beck H, Pechere JC: *Prog Antimicrob Anticancer Chemother 1*:663-667, 1969. **4.** Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts;* Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. **5.** Schreiner A *et al: Infection* 6(2):54-56, 1978. **6.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **7.** Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts. Op. cit.*, pp. 15-16. **8.** Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. **9.** Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. **10.** Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

cks *H. influenzae*—even
npicillin-resistant strains



attacks *S. pneumoniae*

Economical
b.i.d.

Bactrim™ DS

(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

*Due to susceptible organisms. **Please see next page for summary of product information.**

Bactrim™

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100, Tel-E-Dose® packages of 100, Prescription Paks of 20 and 28. *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500, Tel-E-Dose® packages of 100, Prescription Paks of 40. *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml), cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml), fruit-licorice flavored—bottles of 16 oz (1 pint).

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and Rounds
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scular Radiology, Interesting Case Conf.
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nesthesiology Case Discussion
eekly, Wed., 7:00 a.m., AHSC, Dining Rm. &D.

nesthesiology Resident Presentation
t Monday, 4-5 p.m., AHSC Dining Room, &D, Contacts: Drs. Otto & Zehngut.

ancer Center Tumor Board Seminar
d Tuesday, Monthly, 12-1 p.m., HSC uditorium, Contact: Cancer Center.

ardiac Catheterization Conference
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eekly, Tuesday, 7:30 a.m., Contact: Dr. oeske.

ucson Cardiovascular Society
st Thursday, 6:00 p.m., AHSC, Contact: r. Byrne-Quinn.

linical Immunology, Allergy & heumatology Rounds
very Friday, Noon-1 p.m. Contact: John oyer, M.D., Dept. of Internal Medicine.

erebrovascular Disease Conference
ondays, 5-6 p.m., Weekly, Rm. 5505., ontact: Jerry Goldstone, M.D., Dept. of urgery.

ermatology Conference
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ermatology Rounds
Veekly, Wed., 11:30 a.m., Contact: r. Lynch.

Endocrinology Seminar
Weekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wed., 4:00 p.m., Contact: Dr. Manning.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wed., 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thurs., 5:00 p.m., Contact: Dr. P.C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C.D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C.D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wed., 8:00 a.m., Contact Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thurs., 11:30 a.m., Contact: Dr. Nagle.

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Resident's Conference
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Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wed., 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
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Toxicology Conference
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General Urology Conference
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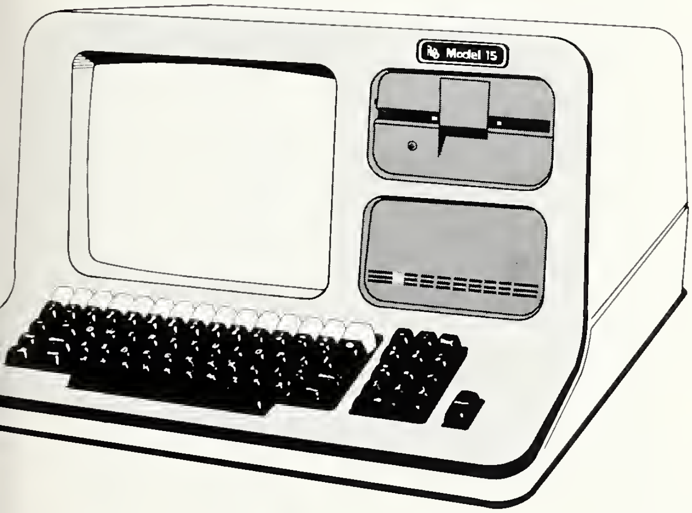

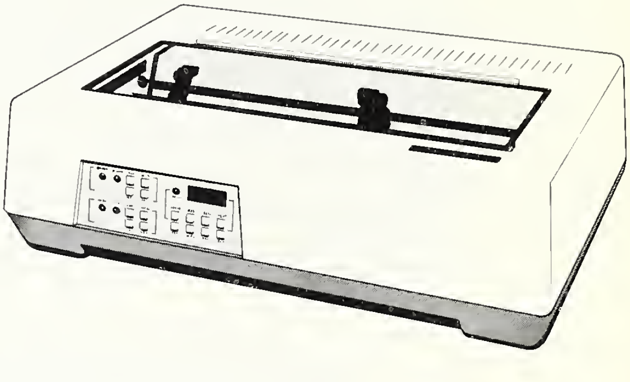

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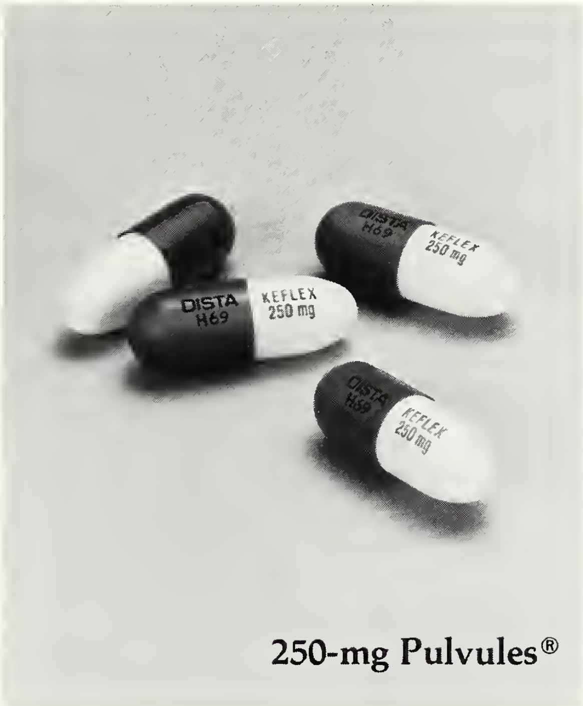

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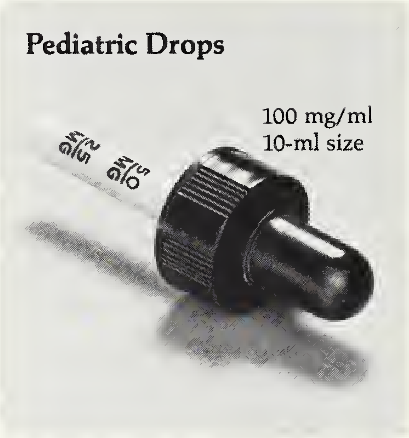

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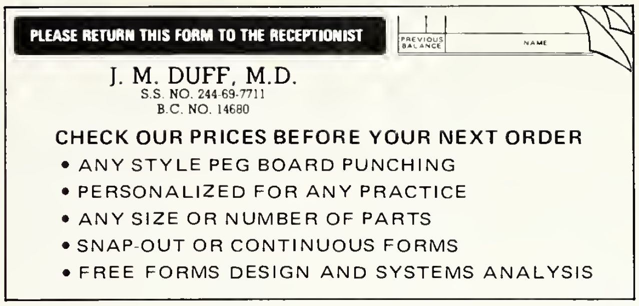

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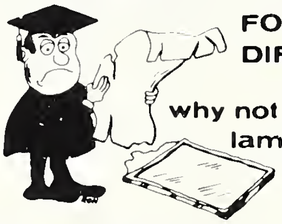

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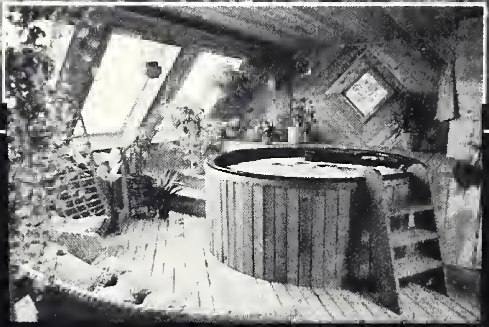

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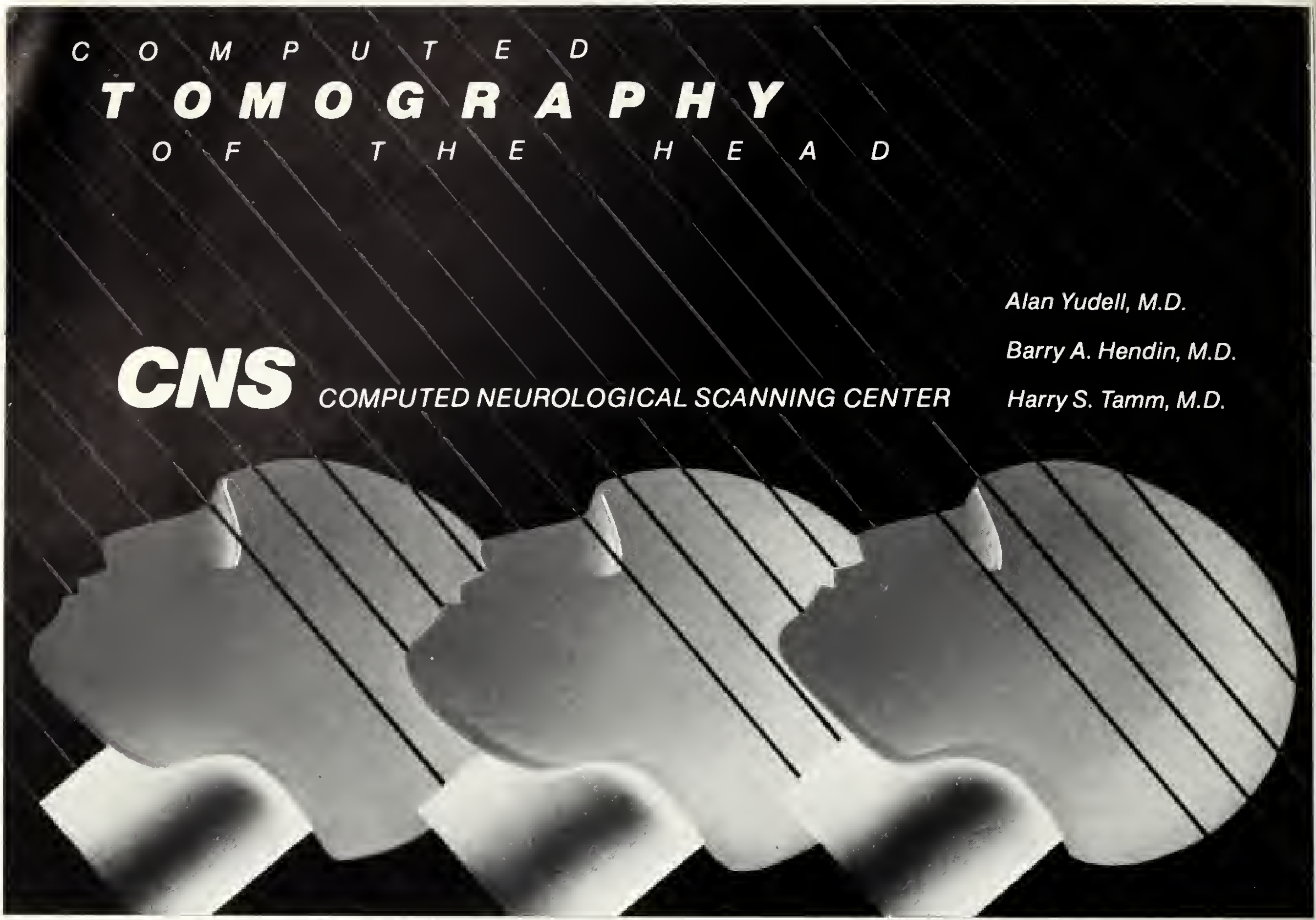

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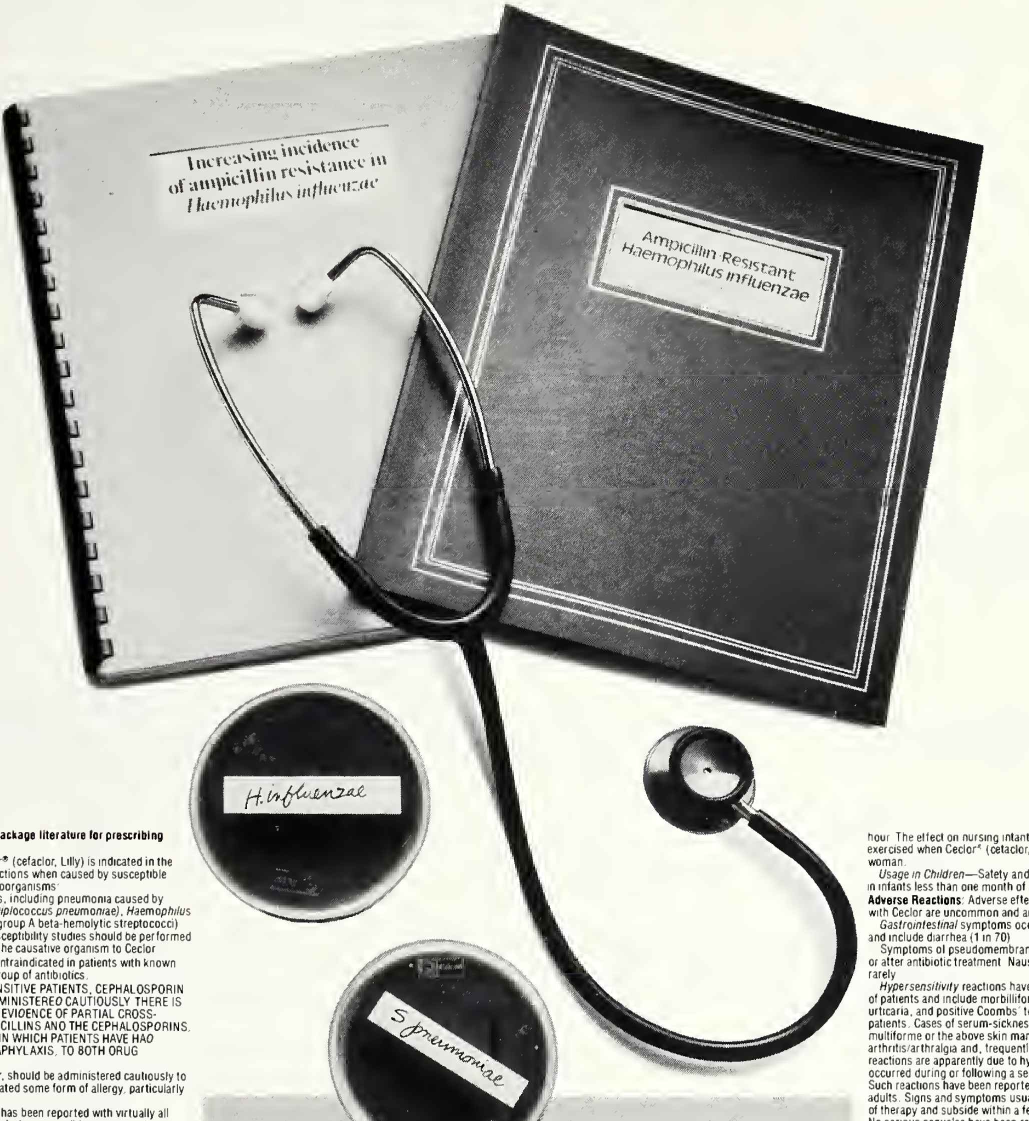
An added complication... in the treatment of bacterial bronchitis*


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

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Brief Summary. Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by C. *difficile* Other causes of colitis should be ruled out

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour The effect on nursing infants is not known Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman.

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

---

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae* [8]

Note Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information.

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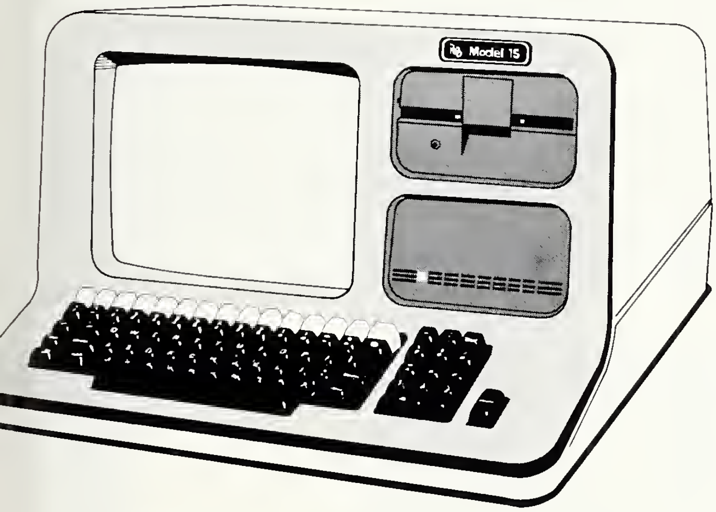

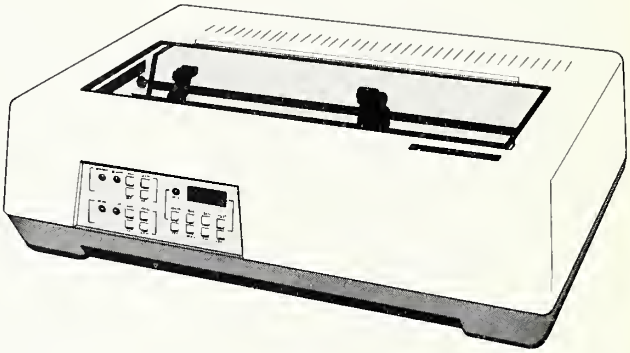

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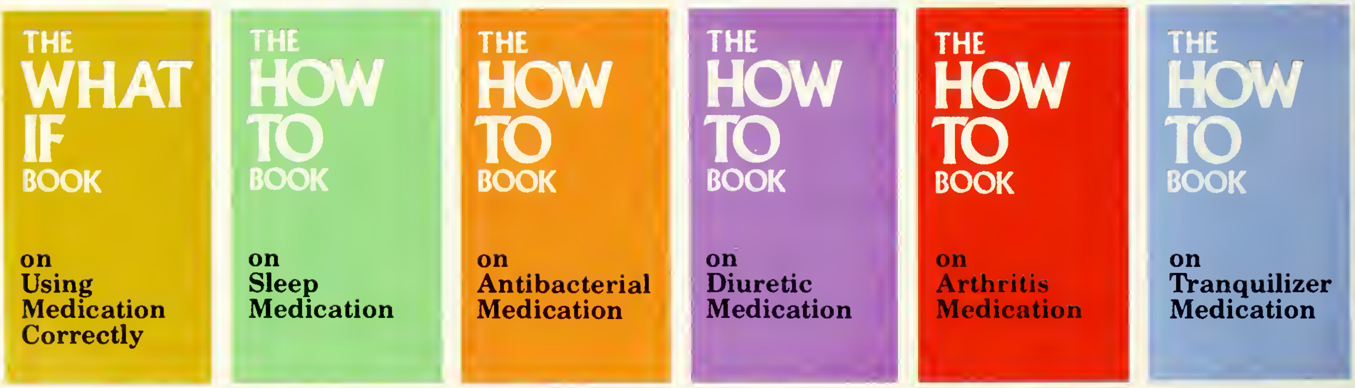
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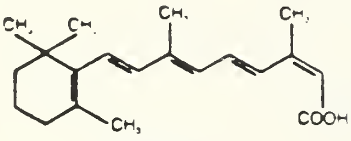
Seminars in Dermatology

Isotretinoin: A Review

Kirsten Becker, Pharm. D.

Editors:
Ronald C. Hansen, M.D.
Robert A. Schwartz, M.D.

Isotretinoin is the orally active 13-cis isomer of retinoic acid. It has evoked a great deal of interest due to its diminshed toxicity compared with natural Vitamin A therapy. Its structure is illustrated in the Figure.



Isotretinoin
Figure

Isotretinoin has recently been approved by the FDA for use in the treatment of severe cystic acne unresponsive to conventional therapy. It has also been used for the treatment of keratosis follicularis (Darier's disease), lamellar ichthyosis, epidermolytic hyperkeratosis, unclassified congenital ichthyosiform erythroderma, keratosis palmaris et plantaris, pityriasis rubra pilaris, acanthosis nigricans and psoriasis.[1] Studies have also examined its use in such conditions as x-linked ichthyosis, ichthyosis vulgaris, mal de meleda and ichthyosis hystrix.[1]

The complete details of isotretinoin's mechanism of action are yet to be found. It appears that isotretinoin has multiple modes of action, including: 1) inhibition of sebaceous gland activity, decreasing sebum production by 80% to 90%;[2] 2) antikeratinizing effects;[3] 3) inhibition of the growth of *Propionibacterium Acnes* within the follicle;[4] 4) inhibition of inflammation;[3] and 5) inhibition of human tumor stem cells.[5]

Pharmacokinetics

Isotretinoin is rapidly absorbed from the gastrointestinal tract following oral administration.[6] Mean plasma levels are reached in approximately two to three hours.[1] Isotretinoin is 99.9% protein bound, almc entirely to albumen.[1] Isotretinoin's elimination fits a tv compartment pharmacokinetic model with a rap distribution half-life of approximately 30 minutes, and terminal elimination half-life ranging from 10 to hours.[1] Isotretinoin undergoes extensive first p metabolism. It is oxidized in the liver to form 4 ox isotretinoin, isotretinoin's primary metabolite, whi has an elimination half-life of approximately 29 hour

The pharmacologic activity of 4 oxo-isotretinoin other metabolites of isotretinoin has not been review in the literature. Isotretinoin and 4 oxo-isotretinoin a subsequently conjugated to the glucuronide forms a excreted in the urine and the bile.

Clinical Trials

A four month pilot study by Peck, et al., use isotretinoin (mean daily dose 2 mg/kg/day) to treat patients with *treatment resistant cystic* acne.[7] The results showed a complete remission of cysts in 13 of t 14 patients two months after treatment had bee discontinued. Prolonged remissions averaging months were noted in all 14 patients. Continued heali occurred in a number of patients after treatment h been discontinued.

Following the above study, Peck, et al., completed four month, randomized, double-blind study cor paring the use of isotretinoin to placebo in 33 patien with *treatment resistant cystic* acne.[2] This study fou that the 18 patients who originally received isotretino (mean daily dose 0.9 mg/kg/day) had a 95% decrease the number of cysts. The placebo patients developed overall 57% increase in the number of cystic lesio during the course of the study. Therefore, 16 of the placebo patients were eventually treated wi isotretinoin in an open fashion. The open study showe the number of cysts decreased by 98%. Lesio completely cleared in 27 of the total 32 patients treate with isotretinoin. All patients were in remission months after the study; however, five patients had h episodes of relapse which could have been attributed a lower than mean dosage of isotretinoin or age. The were no relapses in patients 20 years or older. Continue healing was noted after discontinuation of therapy.

Three studies, discussed below, used the Windhor protocol in an open study design to exami isotretinoin's effects in: 1) pityriasis rubra pilari 2) lamellar ichthyosis; 3) epidermolytic hyperkeratosi 4) ichthyosis vulgaris; 5) x-linked ichthyosis; 6) co genital ichthyosiform erythroderma; 7) Darier's di ease; and 8) keratosis palmaris et plantaris.[8-11] The da and results of these studies are presented in the Tabl

The Windhorst protocol involved different courses treatment:

1. *Short-term Course I* lasted six weeks and was th initial therapy for all patients. An initial daily dose of 0 mg/kg/day in two divided doses was used and could b increased by 0.5 mg/kg/day every week to a maximu of 4 mg/kg/day, or decreased by 0.5 to 1 mg/kg/da

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From: Pharmacy Resident, Veterans Administration Medical Center, Martinez, California. Reprint requests to: Kirsten Becker, Pharm. D., Pharmacy Service, Veterans Adiministration Medical Center, 150 Muir Road, Martinez, California 94553.

Table

ease State	Number of Patients	Mean Daily Dose Mg	Mean Days of Therapy	Percent Clearly Improved*
riasis rubra pilaris[9]				
hort-term course I	45	2.1	122	96
hort-term course II	9	1.5	122	100
hort-term course III	3	1.5	122	100
ong-term course I	16	1.6	152	94
ong-term course II	4	2.0	152	50
ellar ichthyosis[10]				
hort-term course I	59	2.2	171	97
hort-term course II	26	1.6	171	100
hort-term course III	12	1.8	171	92
ong-term course I	39	2.2	227	100
ong-term course II	10	1.7	227	100
ong-term course III	4	2.0	227	100
dermolytic hyperkeratosis[10]				
hort-term course I	22	1.9	198	95
hort-term course II	7	1.2	198	100
ong-term course I	13	1.5	283	85
ong-term course II	7	2.3	283	100
ong-term course III	2	0.8	283	100
thyosis vulgaris[10]				
hort-term course I	9	1.8	—	44
inked ichthyosis[10]				
hort-term course I	5	1.8	—	80
ngenital ichthyosiform erythroderma[10]				
hort-term course I	4	2.0	—	100
rier's disease[11]				
hort-term course I	104	1.9	198	95
hort-term course II	28	1.4	198	93
hort-term course III	11	1.4	198	91
ong-term course I	37	1.4	147	92
ong-term course II	11	1.2	147	91
ong-term course III	1	1.0	147	—

ercent clearly improved was determined by the physician, using a multiple parameter rating scale.[8]

epending on the patient's clinical response or side ffects. The course of therapy following Short-term ourse I was determined by the physician.

2. *Short-term Course II* began after an eight week rest eriod from Short-term Course I and continued for 12 eeks. During the first week of Short-term Course II, otretinoin was used at half the daily maintenance dose etermined in Short-term Course I. Thereafter, the dose as increased to the full maintenance dose and given for hree weeks on a daily basis. For the final four week, it as given on an alternate week basis to determine if ntermittent therapy was effective.

3. *Short-term Course III* began after an eight week est period from Short-term Course II. The Short-term Course I daily maintenance dose was given for a one eek duration and thereafter every other day for eleven eeks.

4. *Short-term Course IV* lasted 12 weeks with an ndividualized dosing schedule based upon the patient's revious response.

5. *Long-term Treatments* lasted six months using the stablished Short-term Course I daily maintenance dose. Two six month courses were separated by a two week rest period.*

Forty-five patients participated in Short-term Course I isotretinoin treatment of *pitryiasis rubra pilaris.*[9] Ninety-six percent of patients clearly improved. Following other courses of isotretinoin therapy, a greater than 94% improvement was seen in patients, with the exception of Long-term II. In patients who relapsed, it was felt that the severity of symptoms was less than before treatment.

Fifty-nine patients were treated with isotretinoin, Short-term Course I, for *lamellar ichthyosis.*[10] Ninety-seven percent of these patients clearly improved. At the end of other courses of treatment, improvement was seen in 92% to 100% of the patients. Following Short-term Course I, the patients' symptoms relapsed to pretreatment levels. There was no mention of how the patients responded when other courses of isotretinoin therapy were discontinued.

Twenty-two patients with *epidermolytic hyperkeratosis* were treated with Short-term Course I isotretinoin.[10] Over 95% of the patients were rated as

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**The literature never discusses why the rest periods between Long-term treatment are short (2 weeks) and those between Short-term treatment are long (8 weeks).*

clearly improved by the end of treatment. Eighty-five to 100% of the patients clearly improved while on other isotretinoin courses of treatment. Patients tended to relapse after Short-term Course I treatment was discontinued. The clinical response to discontinuing other isotretinoin courses was not discussed.

Nine patients with *ichthyosis vulgaris*, five patients with *x-linked ichthyosis* and four with *unclassified congenital ichthyosiform erythroderma* were treated with short-term isotretinoin.[10] Unfortunately, the number of patients representing each of the three disease states was small, making it difficult to determine the efficacy of treatment. It appears that the isotretinoin was more effective in x-linked ichthyosis and congenital ichthyosiform erythroderma than in ichthyosis vulgaris. It was not mentioned why these patients received only Short-term Course I treatment or whether they remained in remission after treatment was stopped.

One hundred and four patients were treated with Short-term Course I isotretinoin for *Darier's disease* .[11] Ninety-five percent of these patients clearly improved. Evaluation of other courses of isotretinoin showed that greater than 90% of the patients clearly improved. After courses of treatment were stopped, the patients' symptoms relapsed approximately to pretreatment levels.

For four of the seven disease states presented above, patients were entered into Short-term Courses II and III. Although the patient populations were small, the results indicate that alternate day and alternate week dosing are effective. It was not mentioned whether there was a decrease in the number or frequency of side effects with the alternate day/week dosing. There were no significant differences between long-term and short-term courses in the percentage of patients who clearly improved, excluding Long-term Course II treatment or pityriasis rubra pilaris. The literature does not clarify what basis physicians selected patients for courses beyond Short-term Course I.

Adverse Reactions

Adverse reactions due to isotretinoin appear to be dose-related with regard to incidence, onset and severity, following doses greater than 1 mg/kg/day. Primary side effects reported have been limited to the skin and mucous membranes (cheilitis, facial dermatitis, conjunctivitis, xerosis and dryness of nasal mucosa with nose bleeds.[12] Isotretinoin has been found to produce fewer central nervous system toxicities and possibly fewer bone, joint, and muscle problems than high dose natural Vitamin A therapy.[13] There is a 25% incidence of hypertriglyceridemia which may be controlled by adjusting the patient's diet and decreasing the dosage of isotretinoin. Other abnormal lab values may include an increased sedimentation rate and a transient increase in liver function tests. Teratogenic effects have been found in the animal model.[13] It is recommended that sexually active women treated with isotretinoin use effective forms of birth control during and up to one month after treatment. Human toxicity data has not been reporte
date.

Dosage

The manufacturer recommends a daily dose of 1
mg/kg/day divided into two doses and given over a 1
20 week period for the treatment of cystic a
unresponsive to conventional treatment. The d
should be individualized according to the patie
weight and the severity of disease. The onset of
therapeutic effect may take several weeks. Pretreatm
and follow-up triglyceride levels should be monitor
If the disease state does not resolve after the first cou
of therapy, a second course may be initiated two or m
months after the first course has been discontinu
Isotretinoin may induce remissions lasting from mor
to years after treatment has been discontinued.

Conclusion

Isotretinoin, a synthetic, orally active Vitamin
analog, has recently been approved by the FDA for
treatment of severe cystic acne unresponsive
conventional therapy. It has also been used to tr
disorders of keratinization; however, double-bli
controlled studies are needed to confirm its effecti
ness in this capacity.

Isotretinoin appears to have fewer toxicities than hi
dose natural Vitamin A therapy for the above list
disease states. Isotretinoin's primary side effects
limited to the skin and mucous membranes. A 2
incidence of hypertriglyceridemia has been observe
which may be controlled with diet and a decrease in t
dosage of isotretinoin.

Acknowledgement

I would like to thank Todd Becker, Chris DeSo
Pharm. D., and Ms. Margaret Prindle for their editor
assistance.

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AM *Gastroenterology & Liver Disease*

ndoscopic Removal f Benign Small owel Tumors

ary L. Dunnington, M.D.
ugo V. Villar, M.D., F.A.C.S.

itors:
even R. Kanner, M.D.
orge E. Burdick, M.D.
ephen Glouberman, M.D.
bert Sanowski, M.D.

ostract

The progress of fiberoptic endoscopy as both a agnostic and therapeutic modality began with colonic oplasms but more recently includes evaluation and anagement of small bowel tumors. Although small wel tumors comprise less than ten percent of all strointestinal tumors, their importance is emphasized a fifty percent incidence of malignancy as well as their casional presentation as abdominal pain or significant eeding as in the case report to follow. The first report endoscopic removal of a small bowel tumor in merican literature occurred in 1973 and since then a tal of 17 cases have been reported. This paper briefly views benign small bowel tumors with regard to the ual course of management and more closely examines doscopic removal as a therapeutic modality. In lected cases endoscopic removal of benign small wel tumors is a safe, reliable and economic alternative surgical management.

ey Words: small bowel tumors, fiberoptic endoscopy

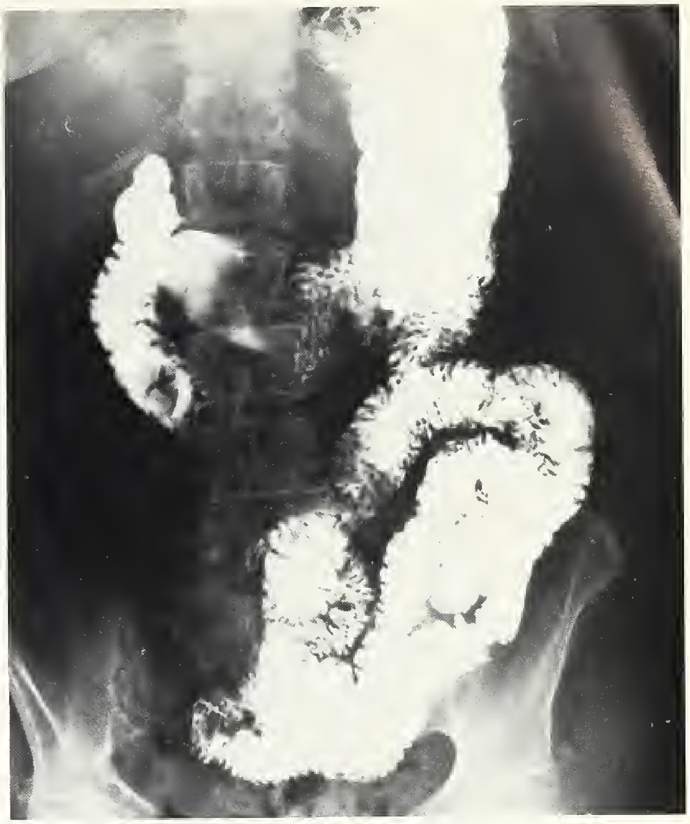

Figure 1
Large polypoid, smooth mass at the junction of the 2nd and 3rd portion of duodenum.

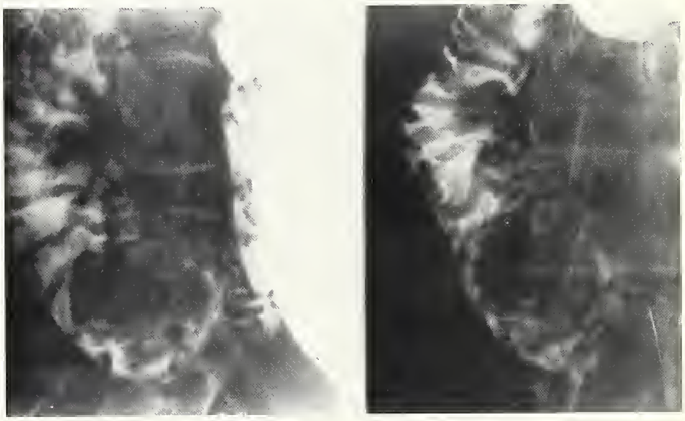

Figure 2
Close-up of duodenal mass.

Case Report

A 74-year-old white female presented with a ten month history of weakness and melena. Laboratory findings revealed iron deficiency anemia with a hemoglobin of 9.1 gm percent. An upper GI series showed a large, smooth mass in the first portion of the duodenum (Figures 1 and 2). Duodenoscopy confirmed the presence of a smooth polypoid mass. The patient was

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om: University of Arizona Health Sciences Center, Department of rgery, Tucson, Arizona 85724. Reprint requests to Hugo V. Villar, .D., F.A.C.S., Department of Surgery, University of Arizona Health iences Center, Tucson, Arizona 85724.

considered to be a candidate for endoscopic polypectomy. Polypectomy was done uneventfully using the Olympus GIF-D3 endoscope and the Cameron-Miller electrocoagulation unit. A 3 x 2.5 x 2 cm polypoid mass was retrieved. Recovery was uncomplicated. Histology revealed a benign tumor composed of mature adipose tissue. A thin capsule demarcated the tumor from the submucosa. Three years later, upper GI series and endoscopy revealed no recurrence (Figure 3). There has been no further evidence of gastrointestinal bleeding.

Comment

Benign neoplasms of the small intestine are of uncommon occurrence but because of their nonspecific symptomatology have long been a diagnostic enigma to the clinician. The first collective review was published by Heurteaux in 1899[1] and data has accumulated slowly since that study.

Their incidence has been variously stated but there is general agreement that benign tumors of the small bowel are found at least 15 times more often among autopsies than among surgical specimens. This disproportion suggests that the majority are asymptomatic.[1] In 22,810 autopsies Buckstein found 65 small bowel tumors, 35 of which were benign (54%).[1] Wiebel collected 165 small bowel tumors over a 16 year period and found 65 to be benign (39%).[1] Other studies indicate that from 25% to 57% of small bowel tumors are benign.[1] It is of significance that 23.8% of all benign tumors of the GI tract are found in the small bowel.

With regard to pathology, more than three-fourths of the benign tumors of the small bowel are adenomas, lipomas, polyps, myomas, fibromas, angiomas and hemangiomas. More than two-thirds of small bowel tumors are of connective tissue origin. These tumors are found as intraluminal, extraluminal or intramural growths and may be polypoid, globular, plaque-like or annular in nature.

Symptoms and signs of benign small bowel tumors are primarily a result of the mechanical condition effected by the tumor. Benign duodenal neoplasms most often are manifested by obstruction. Epigastric pain is the most common symptom. Secondary anemia is present in cases of prolonged bleeding. Jejunoileal neoplasms most often present with a clinical picture of obstruction, 50% of which are intussusception phenomena.[2]

The diagnosis of small bowel tumors is most frequently made with upper GI radiographic studies and more recently by endoscopy. Upper GI endoscopy is of special value when roentgenographic studies are inconclusive.

Surgical management of benign small bowel tumors consists primarily of an enterotomy and tumor excision either by wedge resection or segmental small bowel resection. It was not until 1973 that successful endoscopic removal of a small bowel tumor was first reported in American literature. Haubrich first endoscopically removed a papillary adenoma from the

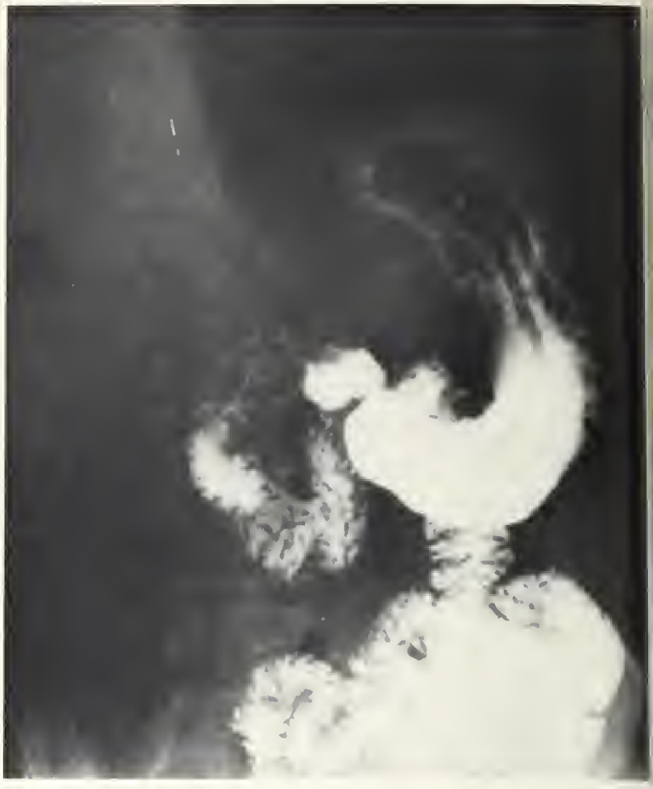

Figure 3
Upper gastrointestinal series three years later. Notice norm
duodenum.

third portion of the duodenum in a 52-year-old femal
Since Haubrich's success, endoscopic removal has bee
reported in only sixteen additional cases. These cases a
summarized in Table 1. Most of these patients present
clinically with abdominal pain and or bleeding (82%
The diagnosis of small bowel tumor was ma
radiologically in 82% of these cases. The 19 tumors
these 17 patients were removed without morbidity
mortality. The most distal tumor was removed from t
proximal jejunum immediately distal to the ligament
Treitz. In this case polypectomy was performed in t
usual manner with the use of glucagon to cau
relaxation of the gut when spasm of the ligament
Treitz was encountered.[5] The pathology of recover
specimens includes five lipomas, five adenomas, a
five benign polyps. Approximately 80% of the remov
tumors were classified as being in one of these thr
histologic groups.

In each of these cases, endoscopic evaluation alo
with biopsy and cytology is of utmost importance
exclude malignancy before accepting endosco
removal as a definitive procedure.

The importance of endoscopic removal of small bow
tumors is the comparative advantages it offers ov
surgical management. Of primary importance is t
decrease in morbidity and mortality by avoiding
transabdominal approach. Potential complications
endoscopic removal include bleeding, pancreatitis a
bowel perforation but have not occurred in t

Table

es	Age	Sex	Symptoms	Roentgenographic Findings	Endoscopic Findings	Pathologic Findings	Complications
Appel[4]	36	M	bleeding	duodenal polyp	duodenal polyp	Brunner's gland hyperplasia	none
Appel[4]	61	F	bleeding	normal	duodenal polyp	specimen not recovered	none
Appel[4]	49	M	bleeding	duodenal polyp, duodenal ulcer	duodenal polyp and ulcer	lipoma	none
Bruns, Jacobs[5]	69	M	diarrhea	folds in duodenal blub, 1.5 cm duodenal lesion	nodule, grape-like protrusion in duodenum	Brunner's gland adenoma	none
Bruns, Jacobs[5]	58	M	epigastric pain, heartburn	hiatus hernia, duodenal polyp	prepyloric and duodenal polyp	Brunner's gland adenoma	none
Bruns, Jacobs[5]	60	M	indigestion	duodenal mass on stock	sessile polyp in distal duodenum	lipoma	none
Bruns, Jacobs[5]	68	F	vomiting, weakness	hiatal hernia	duodenal polyp	lipoma	none
Bruns, Jacobs[5]	20	F	weakness, melena, bleeding	two jejunal polyps	small gastric polyps, two jejunal polyps	2 hemartomatous jejunal polyps	none
Bruns, Jacobs[5]	73	M	epigastric pain	duodenal protusion	duodenal polyp	inflammatory polyp	none
Bruns, Jacobs[5]	74	F	abdominal pain, bleeding	duodenal bulb, lucency	two duodenal masses	Brunner's gland adenoma	none
Dagradi, Ruiz and Alaama[6]	67	M	bleeding	duodenal bulb, polyp	duodenal polyp, ulcerated	adenomatous polyp	none
Haubrick, Johnson, Foroozan[3]	52	F	right flank pain	polyp, 3rd portion of duodenum	duodenal polyp	papillary adenoma	none
Wald, Milligan[7]	68	F	bleeding	polypoid lesion near ampulla	two duodenal polyps	lipoma, adenomatous polyp	none
Wald, Milligan[7]	58	F	abdominal pain	duodenal bulb polyp	broad based duodenal polyp	benign polyp	none
Alper, Haubrick[8]	72	M	pain at right rib margin	2 cm defect in duodenal cap	duodenal polyp	Brunner's gland adenoma	none
Hajiro, et al.[9]	61	M	abdominal pain, diarrhea	dilation of 1st and 2nd portion of duodenum	intraluminal duodenal diverticulum	normal duodenal mucosa, well developed muscularis mucosae	none
Dunnington, Villar	74	F	bleeding	smooth mass in duodenum, 1st portion	polypoid mass	lipoma	none

eported cases. The savings in terms of time and money e dramatic. Patients are often discharged the day ollowing the procedure thus saving hospital costs volved in recovery from a laparotomy. For the patient ith significant systemic disease making operative tervention a prohibitive risk, endoscopic removal of mptomatic benign small bowel tumors is certainly the rocedure of choice.

At present only three to six percent of all astrointestinal neoplasms occur in the small bowel and nly a small percentage of these tumors are both benign nd symptomatic. However, in this group of patients, ndoscopic removal offers a definitive therapeutic lternative with significant advantage over surgical tervention.

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Medical Genetics

Legal Liability with Genetic Conditions

Frederick Hecht, M.D.

Editor:
Frederick Hecht, M.D.

Abstract

Medical genetics is now a part of medicine and is therefore the focus for a growing number of medical malpractice suits. These suits are against physicians in numerous fields as well as against hospitals and laboratories. Matters subject to malpractice to date have included genetic diagnosis, counseling and testing. Illustrative law cases are discussed involving maternal age, family history of Down syndrome, single gene diseases such as polycystic kidney and neurofibromatosis and Tay-Sachs testing. To avoid malpractice suits, the physician must be current and knowledgeable in medical genetics and deliver good genetic care patients. Or, the physician must refer patients f genetic services to a genetics center.

The merger of medicine and genetics has occurred the United States largely since 1945: the conclusion World War II. In 1946, for example, the American Socie of Human Genetics was formed. One of the founders the Society, Hermann J. Muller, received the Nob Prize that year for his pioneering work on the mutagen effects of x-rays. In the ensuing years, innumerab advances in medical genetics have occurred. The Nob Prize has been awarded—at least one in every thre years since 1946—for research in genetics.

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WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Pepti ulceration, perforation, or gastrointestinal bleeding can end fatally, however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastro-intestinal tract disease, and only after consulting the ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: *Coumarin-type anticoagulants.* The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS: **Incidence greater than 1%. Gastrointestinal**: The most frequent adverse reaction is gastrointestinal (4 to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distres nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). Central Nervous System: dizziness*, headache, nervousness. Dermatologic: rash* (including maculopapular type), pruritus. Special Senses: tinnitus. Metabolic: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).
*Incidence 3% to 9%.

Incidence less than 1 in 100. Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. Central Nervous System: depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. Dermatologic: vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome and alopecia. *Special Senses*: hearing loss, amblyopia (blurred and/or diminished vision, scotomata and/or changes in color vision) [see PRECAUTIONS]. Hematologic: neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura eosinophilia, decreases in hemoglobin and hematocrit. Cardiovascular: congestive heart failure in patients with marginal cardiac function, elevated blood pressure. Allergic syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasms (see CONTRAINDICATIONS). Renal: acute renal failure in patients with preexisting significantly impaired renal function. decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. Miscellaneous: dry eyes and mouth, gingival ulcers, rhinitis.

Causal relationship unknown. Gastrointestinal: pancreatitis. Central Nervous System: paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri. Dermatologic: toxic epidermal necrolysis, photo-allergic skin reactions. Special Senses: conjunctivitis, diplopia, optic neuritis. Hematologic: bleeding episodes. Allergic: serum sickness, lupus erythematosus syndrome, Henoch-Schonlein vasculitis. Endocrine: gynecomastia, hypoglycemia. Cardiovascular: arrhythmias (sinus tachycardia, bradycardia, and palpitations). Renal: renal papillary necrosis.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine, alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease. Suggested dosage 400 mg t.i.d. or q.i.d.

Dysmenorrhea: 400 mg every 4 hours as necessary.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for the relief of pain. *Do not exceed 2,400 mg per day.*

CAUTION: Federal law prohibits dispensing without prescription.

n certifying physicians in medical genetics. A parable board examination came earlier into ence in Canada.

practice Suits

e convergence of medicine and genetics to form ical genetics has brought with it distressing practice suits. These suits concern the standard of ical care in the United States and they clearly neate aspects of legal liability in genetic matters.

e purpose of this article is to review briefly certain nese malpractice suits. The general matter of tort lity in genetic counseling has been addressed ntly.[1] The suits referred to below also have been ted excellently in more sophisticated detail where.[2]

latter Simply of Age

ominent malpractice suits have related to the age of mother.[1] The risk of Down syndrome, as is well wn, rises with the age of the mother. (There is also a sible increase in risk with the age of the father.)

sons vs. Guerinot

r. and Mrs. Karlson and their Down syndrome ghter sued Drs. Guerinot and Grunert, Mrs. son's obstetricians, because at 37 years of age, she not informed of her increased risk for a Down drome birth or provided access to amniocentesis. court recognized Mr. and Mrs. Karlson's complaint uffering from the birth of their child.

ker vs. Schwartz

rs. Becker, a 37-year-old woman, sued Dr. Schwartz, obstetrician. She alleged that Dr. Schwartz and his ciates failed to warn her of her increased risk of vn syndrome and also did not tell her of the lability of amniocentesis: She gave birth to a Down drome child. The New York Court of Appeals ruled in r of Mrs. Becker in the recovery of costs for itutional care of her child.

mments

hese two cases were in New York State. Whether ilar issues would be decided along the same lines in zona is not yet known, since each state can decide se matters differently. However, as has been cussed,[3] it would appear to be good standard practice ay to consider any woman who will be 35 years or re at delivery as an increased risk for a Down drome child, discuss this with the patient, and make niocentesis available to her. Equally well, a physician refer such a patient to a genetics center for genetic unseling as to the age factor, other genetic aspects, amniocentesis.

amily History of Down Syndrome

he presence of a prior family member with Down drome has been the basis for a malpractice suit.

llips vs. U.S.

Ar. and Mrs. Phillips and their son brought suits inst the U. S. (Mrs. Phillips' prenatal care and her 's birth occurred at the Charleston Naval Regional edical Center which is under federal jurisdicition). The Phillips sued. Although it was known that Mrs. Phillips' sister had Down syndrome, Mrs. Phillips was not given genetic counseling. Further, she was not offered amniocentesis. The court upheld the parents' claim.

Comment

Failure to take note of the pertinent family history led to this suit. There is an increased risk of Down syndrome when there is a positive family history. The physicians were held negligent for not offering amniocentesis.

A Single Gene Disease: Polycystic Kidney

One of the many single gene disorders is polycystic kidney disease.

Park vs. Chessin

Mr. and Mrs. Park had their first child, who died shortly after birth of polycystic kidney disease. Mrs. Park consulted her obstetrician, Dr. Chessin, who reportedly told her that the chance of her having another child with polycystic kidney disease was negligible.

Mrs. Park then had another child who also had polycystic kidney disease. The child died at several years of age. The court in New York granted the parents recovery for the cost involved in caring for this child.

Comments

Infantile polycystic kidney disease is an autosomal recessive condition with a recurrence risk of 25% for the next-born child, *not* a "negligible" risk. The poorly informed genetic counseling led the parents to recover costs from the obstetricians. Referral to a center for genetic evaluation and genetic counseling would have clearly been appropriate in this clinical situation. This would have led to correct genetic conseling and prevented the suit.

Another Single Gene Disease: Neurofibromatosis

Neurofibromatosis[4] is inherited as an autosomal dominant condition with a 50% chance for each child of a neurofibromatosis parent to receive the gene for this disorder.

Speck vs. Finegold

Mr. Speck had neurofibromatosis as did two of his children who also had accompanying mental retardation. Mr. Speck consulted Dr. Finegold, a urologist, about a vasectomy which was done by Dr. Finegold, who assured Mr. Speck that he was now sterile. Mrs. Speck then conceived and consulted her obstetrician, Dr. Schwartz, and requested that Dr. Schwartz terminate the pregnancy. This (supposedly) was done. However, after the failed vasectomy and the failed abortion, Mrs. Speck delivered a child with neurofibromatosis. The court awarded the parents the costs of the failed surgical procedures and, more importantly, the costs of raising this child with neurofibromatosis.

Comments

Malpractice is malpractice, whether it involves a genetic disease or nongenetic disease.

Genetic Screening and the Laboratory

In Arizona, genetic screening is now done with newborns for phenylketonuria and other metabolic disorders. The same type of screening for a genetic condition is available to persons of Jewish origin: for Tay-Sachs disease.[5]

Curlender vs. Bio-Science Laboratories

At a physician's request, Bio-Science Laboratories in California tested Mr. and Mrs. Curlender to determine whether they were carriers for Tay-Sachs disease. The laboratory reassured the Curlenders they were *not* Tay-Sachs carriers. A child was born to the Curlenders and had Tay-Sachs disease. Their suit was for cost of care, emotional distress, deprivation of normal lifespan and punitive damages. The court granted these claims.

Comment

Bio-Science Laboratories had already been warned that their test method was inaccurate. The court commented that the law should encourage adequate, careful medical practice in such genetic matters.

Gilder vs. Thomas Jefferson Hospital

Mr. and Mrs. Gildner were tested and found to be carriers for Tay-Sachs disease. Mrs. Gildner then had amniocentesis to determine if her pregnancy was affected. The test on the amniocentesis specimen was interpreted by Dr. Laird Jackson, Director of Medical Genetics at Thomas Jefferson Hospital in Philadelphia, who ruled out Tay-Sachs disease. Dr. Jackson recommended to the parents that they continue the pregnancy. The Gildner child had Tay-Sachs disease. The Gildners sued Dr. Jackson, the hospital, and their obstetricians. The court awarded the Gildners costs of medical expenses.

Comments

The test was clearly incorrect. Accuracy in laboratory testing is paramount in such cases. Due to the erroneous lab test, the genetic counseling was in error.

Overall Perspective

Good standards of medical practice apply to medical genetics. If a physician is to engage in the practice of medical genetics, that physician *must* be current in knowledge of the field. Further, the physician *must* provide accurate, appropriate genetic counseling, diagnosis and testing. The physician can, alternatively, refer the patient for genetic services to a genetics center.

Acknowledgment

I am grateful to Margery W. Shaw, M.D., J.D., Director of the Health Law Institute in Houston and President (1981-82) of the American Society of Human Genetics, for access to two scholarly papers (reference 2 and an unpublished manuscript) on this subject.

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Oncology

Hyperthermia: Its Role in Modern Cancer Therapy

University of Arizona Experience

James R. Oleson, M.D., Ph.D.

Editors:
David S. Alberts, M.D.
Ellen M. Chase, B.S.

Abstract

Hyperthermia, with roots centuries old, is the sub of intense current investigation as a modality of car therapy. Elevated temperature by itself can dest malignant cells and can also potentiate the effect radiotherapy and some chemotherapeutic age Clarification of the biological effects of hypertherı has come about through many *in vitro* and *in v* studies. Development of effective means of heat tumors in patients has required significant efforts physics and engineering fields that must continue improve clinical applications of hyperthermia. A mu disciplinary study of hyperthermia was started at University of Arizona in 1974 that has continued, w current emphasis upon clinical trials. Several techni approaches have been used, and the results to date 167 patients at the University of Arizona will

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From: University of Arizona Health Sciences Center, Divisio Radiation Oncology, Tucson, Arizona 85724.

ewed. In light of the promising results, the tinuing role of hyperthermia in cancer therapy will discussed in terms of evolving protocols and niques.

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yperthermia was observed by the ancient Greeks, nans, and Egyptians to cause tumors to regress. ilar observations were made in the late 19th century n patients with malignancy occasionally had partial ession of disease as a result of sustained febrille odes associated with erysipelas. Only over the last years has there been systematic investigation of the ogical effects of elevated temperatures (i.e., above C) upon cells and the interaction between heat, ation, and chemotherapeutic agents.[1] Heat is icularly cytotoxic to cells in portions of the cell cycle ere radiation response is least;[2] heat cytotoxicity also eases when cells are hypoxic and nutritionally rived[3]—conditions characteristic of malignant cells ulky tumors that confer relative radioresistance. In ition to cell death produced by heat alone, it is found heat sensitizes cells to radiation damage[4] and has a ergistic potentiation of effects of bleomycin, cis- inum and nitrosoureas (BCNU).[5] Since malignant s are probably not *intrinsically* more sensitive to heat n normal cells, many of the effects mentioned are of ical interest in situations where tumors can be ted to higher temperatures than surrounding normal ues. Because tumors frequently have a sluggish blood , heat may be retained better than in well-perfused mal tissues, and this frequently can result in higher peratures in the tumor.[6] The technical problems of ly heating tumors to temperatures above 42°C in ents are great and those problems have impeded rough testing of the promising biological rationales ussed. Only over the last two years are heating niques becoming available that improve chances of ng able to heat tumors well in a variety of body ations. These techniques include microwave licators, ultrasound transducers, and magnetic uction coils for superficial tumors; microwave anten- and radiofrequency needle electrodes for rstitial applications; arrays of microwave applicators ultrasound transducers and large magnetic uction coils for heating tumors that are large and/or p in the body.[7]

large number of research centers in this country as l as in Europe and Japan have been conducting perthermia studies. A multidisciplinary effort olving radiobiology, radiotherapy, veterinary nce, physics, medical oncology, and several engineeng areas has burgeoned at the University of Arizona ce the initial trials there with spontaneous animal nors in 1974.

he results to date in the treatment of 167 patients at University of Arizona will be summarized in this ort. Results in the first 43 patients treated have been blished previously,[8] and are also included in the present analysis.

Selection criteria for our studies have included presence of bulky malignancy unlikely to respond to conventional therapy and/or having failed prior therapy. Many patients had disseminated disease, but were judged to have a life expectancy of at least three months. The rationale for localized therapy was based upon need for palliation, preservation of functional status, and possibility of improved local control. Control of locally advanced disease was also part of a systemic approach in some cases. Tumor accessibility for thermometer placement was required for eligibility. All patients signed a consent form for experimental therapy approved by the Arizona Health Sciences Center Human Subjects Committee.

Research Procedures

The 167 patients consisted of 83 males and 84 females, with an age range of 13 to 82 years.

Histologic diagnosis was squamous cell carcinoma in 54 patients, adenocarcinoma in 50 patients, melanoma in 20 patients, sarcoma in 25 patients, and miscellaneous other malignancies in 18 patients.

Detailed description of the heating techniques used is available in the earlier report[8] except for a newer technique, magnetic induction, used for 36 patients. Magnetic induction heating is produced when a high frequency (13.45 MHz) current loop surrounds the torso or extremity of a patient. With this technique, induced current flow within the patient results in power deposition within relatively large body regions, but heating of superficial tissues is more pronounced than heating of "deep" tissues near the body axis.[9]

Microwave applicators were selected for use in patients with tumors less than 5 cm in depth below the skin surface. Due to attenuation of microwave beams in passing through tissue thicknesses greater than about 5 cm, tumors at greater depth were generally heated with magnetic induction techniques or interstitial current fields. The latter technique, particularly useful for low pelvic sites, involved placing stainless steel needles throughout the tumor, then using these needles as electrodes for passing current at 500 kHz through intervening tumor for approximately 30 minutes. After this procedure in the operating room, radioactive iridium-192 was placed into the steel needles to deliver a radiation dose to the temporarily implanted volume.

Patients receiving external radiotherapy were treated with 4 or 10 MV photon beams, or 6 to 18 MeV electron beams, as appropriate. Patients received radiation within 30 minutes after localized heating with microwaves, or received radiation two hours prior to regional heating with magnetic induction.

A small number of patients received heat treatments shortly after completing IV infusions of cis-platinum.

For temperature measurement, thermistor or thermocouple thermometers were introduced into several intratumoral and normal tissue sites via 16 to 18 gauge catheters placed at the time of each hyperthermia treatment; in the case of deep tumors, catheters were initially positioned using real-time ultrasound guidance. Some of the problems in thermometry are discussed in the earlier report.[8]

The number of heat and radiation treatments and radiation dose ranges used are summarized in Table 1.

Standard response evaluation was used: No response (NR), less than 50% decrease in tumor volume; partial response (PR), greater than 50% decrease in volume; complete disappearance, complete response (CR).

Results

Table 2 summarizes the response rates as a function of treatment technique, and Table 3 summarizes these response rates by histology.

In addition to the previously reported toxicity, we observed with interstitial techniques one case of moderate mucositis that spontaneously resolved, and one entero-colo-vaginal fistula that was surgically repaired. A total of six complications in 55 patients (11%) was thus found. With localized heating techniques there was one additional case of 2° and 3° burns that healed spontaneously, bringing the total to four complications in 75 patients (5%). Regional heating approaches produced two cases of minor blistering and two cases of persisting diaphragmatic pain among 37 patients (11%). In summary, there were 14 complications in 167 patients (178 treatment courses), for an overall complication rate of 8%.

Thermometric information cannot be concisely summarized. Minimum intratumoral temperatures were generally highest with the interstitial technique, and were in the range of 43° to 44°C. External localized heating methods, principally microwaves, gave minimum intratumoral temperatures of 40° to 42°C. Regional heating using magnetic induction frequently failed to raise minimum tumor temperatures above 39°C.

These results overall show a response rate with modest doses of radiotherapy that is very favorable, compared to usual clinical experience in treating advanced and/or recurrent disease. Since all treatment protocols were designed principally to reveal toxicity patterns (Phase I), it is clear that the incidence of toxicity remains low enough (8%) to justify increasing the radiation doses and treatment temperatures as well. On the other hand, the observed toxicities are *acute*, and the mean survival of patients does not permit observation of *late* effects of therapy, usually occurring after 6 to 12 months. Since many patients had short follow-up prior to death, it is also impossible to speculate upon the durability of response in this series. Determining incidence of late effects and duration of response requires treating patients with prognosis for survival > six months, and thus requires incorporating hyperthermia into *primary* therapeutic approaches for patients with locally advanced stages of disease.

The variation in response rate by heating technique is significant, and can be related to several factors whose relative importance is undetermined in this study. Fi patients treated with regional heating generally h much bulkier tumors and therefore a poorer progn for response than patients in other categories. Seco with regional heating, the time interval betwee radiation and heat treatment (about two hours) wo be expected to result in less enhancement of radiat effect than in the case of locally heated patie receiving radiotherapy immediately following he (The rationale of a longer time interval in the former c was not only to avoid significant enhancement radiation effect within the large volume of normal tis

Table 1

Heating Method	Average # Heat Treatments (Range)	Average Rad Dose (Range
Heat Alone	7 (1-20)	—
Heat + Chemotherapy	4 (1-10)	—
External Local Heat + XRT	6 (2-8)	3201 (500-6480)
External Regional Heat + XRT	5 (1-6)	2162 (750-5700)
Interstitial Heat + XRT	1 (1-2)	2824 (1500-4560)

Table 2

	Response			
Treatment	NR	PR	CR	CR + P
Heat Alone	12	2	3	5/17 (29
Heat & CTX	10	3	1	4/14 (29
External Local Heat + XRT	16	22	17	39/55 (71
External Regional Heat + XRT	29	6	2	8/37 (22
Interstitial Heat + XRT	9	19	27	46/55 (84)
Total	76	52	50	102/178 (57

Table 3

Histology	Total PR + CR, all Treatment Techniques*
Squamous Cell Carcinoma	32/55 (58%)
Adenocarcinoma	31/53 (58%)
Melanoma	18/26 (69%)
Sarcoma and Miscellaneous	20/50 (40%)

*Differences are not significant, $.05<p<.10$

t was also heated, but also to result in a modest ancement of radiation effect within tumor because different kinetics of repair of radiation damage ught to exist between tumor and normal tissue). rd, it is clear that the regional heating techniques ilable to us infrequently resulted in adequate tumor ating.[10] Thermometry usually indicated that nificant portions of bulky tumors were not heated ove 42°C, which is the lowest temperature at which a nificant effect from hyperthermia would be ected.

The patient group treated with both interstitial heat d radiation, in contrast, had an impressive response e, and we hypothesize that this is due principally to e fact that intratumoral temperatures have been more iformly above 42°C in this group, as well as the fact t a large radiation dose interacts with the heat effect. patients receiving fractionated heat and radiation atments, especially in the regionally heated patients, t all radiation fractions were combined with a heat atment.

sponse with heat alone was low and of short duration, rhaps reflecting the limited cytotoxicity at temperures near 42°C compared to temperatures of 43°C to °C. Heat and chemotherapy response rates were also w. Patients receiving this treatment usually had current disease in head and neck areas after prior rgery and tolerance doses of radiotherapy. Drug livery into these devascularized areas was probably mpromised and, again, the tumor temperatures were ually not at levels producing cytotoxicity from heat one.

It is of interest that response rates did not differ gnificantly by histologic type.

omments

These results, similar to those being reported from a umber of other institutions,[11-16] confirm the promise of perthermia as an adjunct in radiotherapy, but also veal the technical shortcomings in being able to dequately heat tumors in a variety of anatomic cations.

Other approaches are now being initiated into clinical rotocols at the University of Arizona that may gnificantly improve temperature elevations in supercial tumors (ultrasound techniques[11]) as well as in deep ody locations (microwave annular phased array ethod.)[17] As these and other methods demonstrate eliably improved tumor heating in various sites, Phase II te-specific protocols will be started to better explore e role of hyperthermia in primary cancer therapy by roviding dose-response information. Diseases to be onsidered include advanced carcinoma of head and eck sites, non-oat cell bronchogenic carcinoma, arcinoma of pancreas, carcinoma of ovary, endoetrium, cervix, and bladder. In the meantime, Phase I udies will continue, employing various heating echniques in treatment of bulky disease (with or ithout prior therapy) at any site. Such studies can offer palliative benefit to patients as well as opportunities for improving heating techniques and testing toxicity and efficacy of combined modalities.

Results to date encourage us to continue investigating the value of hyperthermia as an adjunct in curative cancer therapy with drugs and radiotherapy, and to develop additional site-specific heating techniques. Insuring attainment of therapeutic temperatures by multipoint thermometry is a difficult but key element in using hyperthermia clinically.

Acknowledgements

This work was supported by NIH/NCI Grant CA-17343 and Contract NO1-CM-17522. Many colleagues have participated in the clinical research, including Drs. M. Manning, R. Heusinkveld, J. Murrell, M. Moore, S. Aristizabel, E. Surwit, F. Meyskins, D. Alberts, C. Koopman, S. Coulthard, D. Sim, E. Gerner, W. Connor, J. Hevezi, and T. Cetas, and their contributions are gratefully acknowledged. M. Bryson has provided excellent data management, and S. McFarland typed the manuscript.

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Psychiatric
Disorders

The Nourishment of the Mind

Part Two, Sensibilities

William B. McGrath, M.D.

Editor:
Thomas E. Bittker, M.D.

The term, sensibilities, is meant to encompass not just aversion to ugliness but also an awareness and responsiveness to beauty and to pathos. These uniquely human features are closely related, interdependent.

Ugliness continues to encroach because beauty is secluded, as in our penitentiary modern architecture and past the turnstiles of vault-like galleries and museums. And when the human spirit can no longer withstand the onslaught of ugliness, then it will not be moved by tenderness or pity or sorrow.

During the Middle Ages people had rather intimate access to beauty. There were heroic statues overlooking their gatherings in the public squares. Sculptures and fountains graced the open gardens. Most inspiring art and music provided the spiritual nourishment of everyday life, for the doors of the gothic cathedrals were never closed. It is no wonder that such an atmosphere fostered the brief effulgence of chivalry, before the human heart was broken beneath the wheels of business and industry.

Come now to a modern city, Carl Sandburg's *Chicago*:
"Hog Butcher for the World,
Tool Maker, Stacker of Wheat,
Player with Railroads and the Nation's Freight Handler;
City of the Big Shoulders."

Our society is demotic (as in demote; and demotic is a more apposite term than democratic). There are no ladies and gentlemen; there are just men and women. Only the demagogue boasts of his own and his followers' lack of breeding, and they would put the coarse and common in control.

Some such condition prevailed in the riotous sixti
Too many of our so-called leaders had lost their integr
and our respect. Devastating disillusionment spread
beyond the political fiascoes of Watergate and Vietna
The churches adopted "situation ethics," a concept
self-emptying as a flush latrine, and the ministe
paraded in sympathy with the gays and a red-light rapi
Many doctors and lawyers sold their birthright for a me
of commercial pottage. In the yellow pages or
architects and engineers cling to their professionalis
and still refuse to advertise. Vulgarity seems to ha
become not just socially tolerated but almost requisite
popularity and to success. This aspect of ugliness
especially visible in behavior or deportment.

A cardinal trait of non-neurotic maturity used to be
willingness, when appropriate, to be a good spo
Sport? How the term has been degraded! Observe th
pushy parents of the Little Leaguer or the buddir
gymnast. Witness the spectacle of the snotty tenn
champion, throwing his temper tantrums in front
grown-ups and on television. Watch the baseba
manager, stamping his feet like a spoiled baby an
screaming and spraying spittle and tobacco juice at th
umpire. Coaches do not get six-figure salaries fo
teaching their charges to be gentlemen. The motto of
hero-worshipped athlete: "Nice guys lose."

That brutish notion (a self-fulfilling prophecy?) ha
seeped into advertising and entertainment, int
commerce and industry and law and into all levels c
politics.

Games in general and athletic contests in particula

From: 4910 North 44th Street, Phoenix, Arizona 85018.

said to be microcosmic rehearsals for combat, for . This is a half truth, dangerously misleading. Equally d and infinitely more worthwhile is the forgotton nciple that sports are meant to teach sportsmanship. cheer the most savage aggression in football or key—and half an hour later we are expected to be rteous and friendly in merging traffic. It is a izophrenic conflict.

nd it points up a terrible dilemma, one which is far re critical than wearisome debates about prayer in lic schools or sex education or the teaching of lution.

he fundamental problem is this: Can a person afford e good natured? Under what circumstances is it right et others have their way, in opposition to one's own -interest? The question is worded imprecisely. These usually not questions of right or wrong but of trying choose a lesser evil. It is often wrong to rescue and el not to; foolish to keep giving and selfish to hhold.

hundred examples come to mind. The parents of ward offspring are doomed to blame themselves and e blamed. If they were loving and permissive, they iled the child. If they were strict and old-fashioned, y drove him to rebellion. If they tried to reconcile se opposing choices, they were inconsistent. But this fter the fact. Now comes the harder decision: how d at what point to call a halt to the subsidizing of sponsibility.

How long should a spouse put up with rudeness or use? And what if there are children to be considered? der people sometimes use exaggerated infirmities to e mean advantage of filial, fourth commandment y. How much unpleasantness should one pretend to erlook on the job and how ingratiating must one be? hen does the nobility of sacrifice tilt over to the urosis of martyrdom?

There are no answers to questions like this. There are commandments or slide rule formulas for the myriad tances in which the individual has to decide between ng aggressive on the one hand or making the greater lesser mistake of being tolerant. Such are the scapable predicaments of everyday life.

n any situation in which a choice between right and ong does not present itself, the churches become serably helpless and ineffectual. The psychotherapist ikely to ask a silly question: "What do you *really* want do?" The individual obviously does not *want* to do ything, if either alternative is wrong, and he is still ong to remain indecisive!

Nowadays, in the give and take of ordinary choosing, word seems to be take. Alarmingly apt is our ample of merging traffic, or when people need to fall line. (I don't know how to pronounce "queuing.") om just about every source the weight of influence mes down on the side of selfishness and ruthless eed and aggression. Look at the titles of popular nfiction books.

If to be a good sport is to be a loser, why in the world would a young person want to be a gentleman?

This is not just a rhetorical question. Recently there has been a flickering revival of interest in etiquette. It is most welcome to those who are concerned about the unhappy condition of modern society. But any such revival will simply fizzle unless we unearth convincing reasons and compensations for courtesy and good manners.

Good manners are like the old definition of the sacraments: the outward signs of inward grace. Now inner grace or peace of mind is not insular, not entirely sui generis. As in the case of beauty, there is the element of exchange with the environment. This reciprocity can be observed, for example, in the softened facial expressions and manners of people leaving one of those rare movies in which decency and kindliness have been portrayed.

Also involved is the universal mechanism of projection. A bitter and self-centered person lives in the acrid fumes of his own exhaling. How one feels and behaves toward one's fellows will predict and in the long run determine their attitudes toward him. Certainly the most infinitesimal increase in simple civility would alleviate more suffering than would all of the achievements of science. We have all noticed when a stranger's unexpected act of kindness and courtesy has released the eager benevolence of others.

Secondly, etiquette must not be mistaken for passivity or weakness. This, of course, is contrary to what we are being taught. Popular heroes are tough, street-wise and cynical, boastfully capable of looking out for themselves, insensitive and intimidating and exploiting toward others. They come on so overbearingly that we don't have a chance to be courteous or reasonable. They are unacquainted with good manners and good taste.

But, oh, do they crowd the doctors' offices and the hospitals! Nice guys lose? Well, guys who aren't nice, your type A aggressives, seem to be gaining a monopoly on stress disorders and psychosomatic diseases and hypochondriasis. A person who is lacking decency or inner grace cannot conceive that others might be trustworthy. He occupies an inner and outer world, like a room in a cheap hotel, in which alcoholism or homosexuality or any of the other nephews of suicide—or suicide itself—might not seem so strange.

Compare this with the serene longevity of some scholars and artists and composers and famous conductors. Theirs were exquisite sensitivities. Their primary interest was not in competing or in profiteering.

A final clue to the hidden value of etiquette is suggested by an older expression: to observe the proprieties. The term is wonderfully apt. As in proprietary, there is the clear inference or implication of ownership. To know and observe the proprieties means that one has made his own choice. This is infinitely more satisfying than to have one's manners imposed by others, as in the case of a servant or a child.

Radiology

Case of the Month No. 64

David Fitzgerald
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Editors:
Jonathan Levy, M.D.
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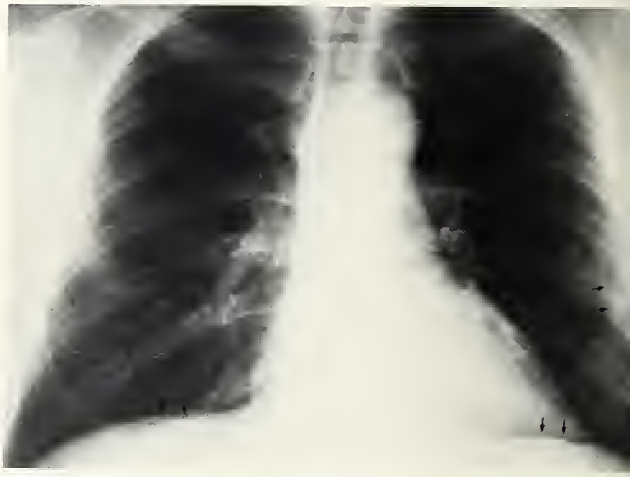

Figure
Abnormalities (arrows) seen on preoperative chest.

A 61-year-old man had a chest x-ray prior to a surgical procedure (Figure 1). He had no chest complaints.

What are the abnormalities?

What is the likely cause?

From: The University of Arizona School of Medicine (DF), and the departments of Family Practice (GJ,RF) and Diagnostic Radiology (JKC), Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85251.

Continued on Page

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INDICATIONS AND USAGE: These preparations are indicated for the treatment of infections caused by susceptible strains of designated microorganisms as follows: Respiratory Tract Infections (e.g., tonsillitis, pharyngitis, and lobar pneumonia) due to *S. pneumoniae* (formerly *D. pneumoniae)* and group A beta-hemolytic streptococci [penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever; Velosef (Cephradine, Squibb) is generally effective in the eradication of streptococci from the nasopharynx; substantial data establishing the efficacy of Velosef in the subsequent prevention of rheumatic fever are not available at present]; Otitis Media due to group A beta-hemolytic streptococci, *H. influenzae,* staphylococci, and *S. pneumoniae;* Skin and Skin Structures Infections due to staphylococci and beta-hemolytic streptococci; Urinary Tract Infections, including prostatitis, due to *E. coli, P. mirabilis, Klebsiella* species, and enterococci *(S. faecalis).*

Note: Culture and susceptibility tests should be initiated prior to and during therapy.
CONTRAINDICATIONS: In patients with known hypersensitivity to the cephalosporin group of antibiotics.
WARNINGS; *Use cephalosporin derivatives with great caution in penicillin-sensitive patients since there is clinical and laboratory evidence of partial cross-allergenicity of the two groups of antibiotics; there are instances of reactions to both drug classes (including anaphylaxis after parenteral use).* In persons who have demonstrated some form of allergy, particularly to drugs, use antibiotics, including cephradine, cautiously and only when absolutely necessary.

Pseudomembranous colitis has been reported with the use of cephalosporins (and other broad spectrum antibiotics); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with antibiotic use. Treatment with broad spectrum antibiotics alters normal flora of the colon and may permit overgrowth of clostridia. Studies indicate a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis. Cholestyramine and colestipol resins have been shown to bind the toxin *in vitro.* Mild cases of colitis may respond to drug discontinuance alone. Manage moderate to severe cases with fluid, electrolyte and protein supplementation as indicated. Oral vancomycin is the treatment of choice for antibiotic-associated pseudomembranous colitis

produced by *C. difficile* when the colitis is severe or is not relieved by drug discontinuance; consider other causes of colitis.

PRECAUTIONS: General: Follow patients carefully to detect any side effects or unusual manifestations of drug idiosyncrasy. If a hypersensitivity reaction occurs, discontinue the drug and treat the patient with the usual agents, e.g., pressor amines, antihistamines, or corticosteroids. Administer cephradine with caution in the presence of markedly impaired renal function. In patients with known or suspected renal impairment, make careful clinical observation and appropriate laboratory studies prior to and during therapy as cephradine accumulates in the serum and tissues. See package insert for information on treatment of patients with impaired renal function. Prescribe cephradine with caution in individuals with a history of gastrointestinal disease, particularly colitis. Prolonged use of antibiotics may promote the overgrowth of nonsusceptible organisms. Take appropriate measures should superinfection occur during therapy. Indicated surgical procedures should be performed in conjunction with antibiotic therapy.

Information for Patients: Caution diabetic patients that false results may occur with urine glucose tests (see PRECAUTIONS, Drug/Laboratory Test Interactions). Advise the patient to comply with the full course of therapy even if he begins to feel better and to take a missed dose as soon as possible. Tell the patient he may take this medication with food or milk since G.I. upset may be a factor in compliance with the dosage regimen. The patient should report current use of any medicines and should be cautioned not to take other medications unless the physician knows and approves of their use (see PRECAUTIONS, Drug Interactions).

Laboratory Tests: In patients with known or suspected renal impairment, it is advisable to monitor renal function.

Drug Interactions: When administered concurrently, the following drugs may interact with cephalosporins:

Other antibacterial agents — Bacteriostats may interfere with the bactericidal action of cephalosporins in acute infection; other agents, e.g., aminoglycosides, colistin, polymyxins, vancomycin, may increase the possibility of nephrotoxicity.

Diuretics (potent "loop diuretics," e.g., furosemide and ethacrynic acid) — Enhanced possibility for renal toxicity.

Probenecid — Increased and prolonged blood levels of cephalosporins, resulting in increased risk of nephrotoxicity.

Drug/Laboratory Test Interactions: After treatment with cephradine, a false-positive reaction for glucose in the urine may occur with Benedict's solution, Fehling's solution, or with Clinitest® tablets, but not with enzyme-based tests such as Clinistix® and Tes-Tape®. False-positive Coombs test results may occur in newborns whose mothers received a cephalosporin prior to delivery. Cephalosporins have been reported to cause false-positive reactions in tests for urinary proteins which use sulfosalicylic acid, false elevations of urinary 17-ketosteroid values, and prolonged prothrombin times.

Carcinogenesis, Mutagenesis: Long-term studies in animals have not been performed to evaluate carcinogenic potential or mutagenesis.

Pregnancy: Teratogenic Effects/Impairment of Fertility — Category B: Reproduction studies have been performed in mice and rats at doses up to 4 times the maximum indicated human dose and have revealed no evidence of impaired fertility or harm to the fetus due to cephradine. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

Nursing Mothers: Since cephradine is excreted in breast milk during lactation, exercise caution when administering cephradine to a nursing woman.

Pediatric Use: Adequate information is unavailable on the efficacy of b.i.d. regimens in children under nine months of age.

ADVERSE REACTIONS: Untoward reactions are limited essentially to G.I. disturbances and, on occasion, to hypersensitivity phenomena. The latter are more likely to occur in persons who have previously demonstrated hypersensitivity and those with a history of allergy, asthma, hay fever, or urticaria.

(continued on next page)

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(continued)

The following adverse reactions have been reported following use of cephradine: G.I. — Symptoms of pseudomembranous colitis can appear during antibiotic therapy; nausea and vomiting have been reported rarely. Skin and Hypersensitivity Reactions — mild urticaria or skin rash, pruritus, joint pains. Blood — mild transient eosinophilia, leukopenia and neutropenia. Liver — transient mild rise of SGOT, SGPT, and total bilirubin with no evidence of hepatocellular damage. Renal — transitory rises in BUN have been observed in some patients treated with cephalosporins; their frequency increases in patients over 50 years old. In adults for whom serum creatinine determinations were performed, the rise in BUN was not accompanied by a rise in serum creatinine. Others — dizziness, tightness in the chest, and candidal vaginitis.

DOSAGE: Adults — For respiratory tract infections (other than lobar pneumonia) and skin and skin structures infections: 250 mg q. 6 h or 500 mg q. 12 h. For lobar pneumonia: 500 mg q. 6 h or 1 g q. 12 h. For uncomplicated urinary tract infections: 500 mg q. 12 h; for more serious UTI, including prostatitis, 500 mg q. 6 h or 1 g q. 12 h. Severe or chronic infections may require larger doses (up to 1 g q. 6 h.).

Children over 9 months of age — 25 to 50 mg/kg/day in equally divided doses q. 6 or 12 h. For otitis media due to *H. influenzae:* 75 to 100 mg/kg/day in equally divided doses q. 6 or 12 h but not to exceed 4 g/day. Dosage for children should not exceed dosage recommended for adults. There are no adequate data available on efficacy of b.i.d. regimens in children under 9 months of age.

For full prescribing information, consult package insert.

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nswer:
alcified pleural plaques
sbestosis

Inhalation of asbestos fibers can cause diffuse lmonary fibrosis or pleural disease, and is associated th both bronchogenic carcinoma and mesothelioma. ccupational exposure occurs predominantly in the nstruction industry (cement, insulation, roofing), the tomotive industry (brake linings, clutches, gaskets) d the mining and ship building industries.

Long-term exposure to high concentrations of bestos causes fibrosis which is usually predominantly the lower lobes, and is associated with pleural ickening. The histologic hallmark of the disease is the sbestos body"; a fiber coated with glycoprotein and emosiderin, and believed to be the result of acrophage action. This presumably releases lysosomal nzymes into the lungs, resulting in pulmonary fibrosis. inically advanced asbestosis can present with dyspnea, y inspiratory rales, clubbing, cyanosis and cor lmonale. Pulmonary function tests show results pical of restrictive lung disease.

In approximately 15% of patients with clinically gnificant asbestosis, bronchogenic carcinoma de- elops, usually 20 to 40 years after the pneumoconiosis s been diagnosed. The severity of the preexisting lmonary fibrosis roughly correlates with the number d severity of neoplasms. Most of the tumors are lenocarcinomas, developing predominantly in the wer lobes. Asbestosis alone increases the risk of bronchogenic carcinoma to approximately five times that of the general public. In the presence of heavy concurrent cigarette smoking, the risk is increased by a factor of approximately ninety. Mesotheliomas of the pleura and peritoneum are seen much less frequently than carcinoma, but their incidence is approximately 1,000 times greater than expected in persons with significant asbestos exposure.

The most common chest x-ray finding in patients with asbestos exposure is a normal film. Pleural plaques are seen radiographically in 50% to 60% of the cases, 30 to 40 years after the initial exposure. (Figure 1). As in this case, the plaques are often bilateral and are not always associated with pulmonary fibrosis. The plaques, which may extend into the fissures, vary in size and thickness, and are often calcified, but are usually asymptomatic. In our case, no evidence of pulmonary fibrosis or other findings of asbestos are seen, but when any of these findings are identified, a careful search for associated carcinoma or mesothelioma should be made.

Due to stricter environmental controls, there has been recent decrease in the exposure of humans to asbestos. However, since asbestos related disease has been shown to have a very long latent period, the results of asbestos exposure will continue to be seen for many years.

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Neurosciences Interdisciplinary Group

The field of neuroscience has been one of the fastest moving, most exciting disciplines of 20th century science, particularly since 1960. Of the twenty-eight Nobel Prizes awarded for distinguished work in this field, sixteen, or more than half, have been conferred after that year. Futhermore, of the 1,281 members of the National Academy of Science (as of July 1, 1979), seventy-one are neuroscientists. Last, but not least, has been the formation and phenomenal growth of an international organization devoted to the study of nervous systems: The Society for Neuroscience (SFN). The SFN was formed in 1971 to bring together workers in the field's many convergent subdisciplines—Anatomy, Biochemistry, Engineering, Mathematics, Neurology, Neurosurgery, Pharmacology, Physiology, Psychiatry, Psychology, Speech and Hearing Sciences, Zoology, and numerous others. Currently the SFN has 7,565 members in the U.S.A., Canada, and Mexico, with 65 local chapters in North America. The Annual Meeting of the SFN attracts over 5,000 registrants, including many of the Society's 269 members from South America, Europe, Asia, and Australia. Dozens of special sessions, workshops, and technical courses are presented, along with literally thousands of papers (the latest program for the 12th Annual Meeting was almost 1,000 pages in length),

Locally, at the University of Arizona, neuroscience is still relatively small, but it is growing, with representation in the Colleges of Engineering, Fine Arts, Liberal Arts, Medicine, and Pharmacy. As an example of the interdisciplinary nature and spirit of Neuroscience, our College of Medicine course offered in Neuroscience for first-year medical students (Anatomy/Physiology 601) is taught by 27 faculty members from five basic-science (16 faculty from Anatomy, Pathology, Physiology, Pharmacology and Speech and Hearing Sciences) and four clinical-science (11 faculty from Neurology, Surgery-Neurosurgery, Psychiatry and Radiology) departments. Cohesion in the course content is achieved by each one-hour lecture being represented by a handout w is incorporated into a syllabus and use of a course coordinator, a clini coordinator and two syllabus coordinators. Outstanding features the course are the splendid cooperation and interaction betwe our basic and clinical science facult and the number of clinical presentations (30 out of 90 lectures The College is particularly apprecia of input from a main-campus department (two faculty from Spee and Hearing Sciences) and from th Barrow Neurological Institute, St. Joseph's Hospital, Phoenix (one anatomist, one physiologist, one neurologist-physiologist, and one neurosurgeon).

To promote and enhance future contributions of the University of Arizona in the area of neuroscience May 1981 President John P. Schaefe formed an Interdisciplinary Commit on the Neurosciences with a six-member Executive Council, later extended to include an Executive Secretary. Under the aegis of Vice-President Lee B. Jones, the principa effort of the committee and its cou is to foster research and, in additio make recommendations to the Administration for the developmen and coordination of educational programs in the neurosciences. The Committee is currently comprised o over sixty faculty from five colleges. Executive Council has three faculty from the College of Medicine and three from the main campus. Altho faculty from the College of Medicin dominate the Committee (42/61) th first major recommendation of the Committee concerned the advisabili of recruiting a renowned group of invertebrate neurobiologists to the main campus of the University. Dr. Jones and President Koffler are activ pursing this possibility with full recognition of the impact the acquistion of such a group could ha on the general level of biological research and teaching at the Univers

In addition, the Committee has already been active in fostering interdisciplinary research, particularl t which links expertise from the in campus with that in the College Medicine. It is further envisioned t teaching programs in Neuroscience the main campus and the College of edicine will be strengthened because Committee provides a mmunication vehicle for faculty to change ideas and make contributions their colleagues' teaching efforts. Ve anticipate continued vigorous ivity from this Committee and are eased to report that it also has strong ks with colleagues at Arizona State iversity, Northern Arizona University d the Barrow Neurological Institute.

uglas G. Stuart, Ph.D.
ofessor, Department of Physiology
uis J. Kettel, M.D.
an, College of Medicine

ne Gathering Storm

cloud on the horizon is shrooming and threatening to come part of the squawl line facing dicine in this decade. I refer to the hering storm between physicians d hospitals. What was once an irely amiable situation shows signs of in and, in some cases, open conflict. he rumblings began with the mendous scientific advances lowing World War II, which required re and more medical care to be ivered in the hospital setting. ysicians became deeply involved with eir patients' needs and abdicated spital management responsibilities to ners. Increased utilization has allowed spitals to progress from a cottage dustry to the powerful institutions of day. Along the way, a new breed of ministrator and trustee has evolved. Where once the hospital governance garded itself, and was so regarded, as ing there mainly to implement the shes and needs of its medical staff, are now seeing administrators and stees not very much different in eir attitudes from corporate chief ecutive officers. Far too many are re interested in the profit and loss eet than in the quality of care ndered in their hospitals.

Some, because of their insulated ining and the necessity for survival in hat has become a highly competitive isiness, tend to look upon physicians part of the hired help—not the men d women who give them reason for ing. They are further emboldened by vealing statistics: approximately one four physicians now works exclusively for the hospital as his employer. When all U.S. physicians with hospital arrangements are counted, fully 150,000 already are beholden in some binding measure far beyond the loyalty that has been the tradition in this country. In my field of obstetrics and gynecology, ten percent of physicians have financial contracts with hospitals. What began, logically and innocently, with in-house pathologists and radiologists, has expanded to virtually every specialty.

Some administrators, feeling their oats, have become so arrogant as to say: "Who needs the private physician? We can buy our own." Not only can they buy them; they have no compunction about canning them either.

The GMENAC projection of physician surplus certainly gives aid and comfort to those administrators who have come to regard physicians as more expendable than physical plant and equipment. They think they see a buyer's market coming down the pike, with the predicted 70,000 to 125,000 physician surplus by 1990. Already, many physicians have signed away their professional birthright in hospital contracts that make it clear, ever so subtly, that they work for the company store, not the patient. As the excess mounts, the temptations of such blandishments can only increase.

The myopia of hospital administrators who see the buying and selling of physician services as scarcely different from buying and selling beds, food, and pharmaceuticals will, in my judgment, intensify the pressure for socialized medicine. It could corrode the one basic element that has made American medicine great—the freedom of choice of physicians.

Although a recent *New York Times* poll revealed that 50% of patients would take an assigned physician if that would reduce medical care costs, it has been my overwhelming experience that the American patient sees his freedom to choose his personal physician as being almost inviolable. This enhances his corollary desire to remain above the faceless numbering he thinks hospitals, government, and all big institutions want to regulate him to.

If the hospital governance feels no strong ties to the physicians who made it what it is today, administrators and trustees should at least be given pause by this powerful attachment American patients have to their private personal physician.

While administrators are servant to the budget, physicians must serve the patient. To be the patient's true advocate requires that the physician operate independently, with no third-party intervention.

Diversity and independence have been the abiding strength of private practice. Kill that, as some hospitals would in riding roughshod over fee-for-service physicians, and they may be killing the goose that laid the golden egg. It is our duty to begin telling that to hospital governance in any way that seems appropriate. We must all become more involved in strengthening the structure of medical staffs. We must continue to serve our patients by making certain that medical decisions within hospital walls are made by physicians.

It seems appropriate that physicians serve on boards of trustees when the bylaws permit and that efforts to change the bylaws should be undertaken when they do not. Tokenism in the form of handpicked medical staff representatives is unacceptable. The hour is late but there is still time to blunt this assault on our professional sovereignty if we take an active and credible role in hospital administrative affairs.

To do less is to invite aggressive administrators to divide and conquer us by placing physicians on hospital payrolls to compete with private practitioners with the implied threat that this is the wave of the future.

Ronald E. Henderson, M.D., President
Medical Association of the State of
Alabama.

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Finding Additional Physicians for Your Practice:

The AMA and the NHSC Join Together to Attract Physicians in Areas of Need

The AMA and the NHSC Join Together to Attract Physicians to Areas of Need.

Despite recent increases in the number of practicing physicians, there are still areas of the country that are considered physician shortage areas because there are not enough physicians for the population or perhaps no physicians at all. In such areas—which are often in rural communities, but which can also be found in certain urban or metropolitan centers—the population does not have adequate access to medical care and their medical needs are not being met.

At the same time, such a situation is an hardship for the physicians who are already practicing in such areas. They are often in practices that are overcrowded and understaffed and where there is no help in sight. Another too common problem, especially in rural areas, concerns the retiring physician who has built up a thriving practice but who is unable to locate a physician willing to take it over. These physicians can't help but wonder at the scenario of too many physicians.

If you are such a physician, you are probably looking for new ways to attract another physician to your community or practice. This is not always an easy task, especially in the more rural areas. But there are ways it can be done. Many of these underserved communities are not economically depressed and could very well support a private practitioner. Frequently, they just need assistance in reaching the right physician audience.

How then does one attract a new physician to such a community? There are several ways. A number of formal placement services exist that can be useful for recruiting physicians. The AMA Physician Placement Service, as well as those operated by many state medical associations and medical specialty societies, have proven very effective, although not always in the most physician-short areas of the country. In addition, many state governments have developed incentive programs for physicians to train and practice in their states. Some allow the community or practicing physician to "sponsor" a new physician through the state.

If you are looking for a primary-care physician, there is now another excellent recruiting source that is available as a result of the National Health Service Corps (NHSC) *Private Practice Option* program. This program is especially effective because of the built-in physician incentives to practice in physician shortage areas. The American Medical Association is working closely with the NHSC on this program to locate communities or practices that would most likely benefit.

How does it work? Each year several hundred new physicians become available whose training has been financed through the NHSC scholarship program. In return for these scholarships, the physicians agree to practice for a period of time in a federally-designated Health Manpower Shortage Area (HMSA). Under the *Private Practice Option*, these physicians can now *fulfill their obligations in the private sector* if they establish a private practice in a Health Manpower Shortage Area. They can locate outside of a HMSA if 80% of their patients are from a nearby HMSA.

The *Private Practice Option* is gaining increasing favor among the NHSC physicians. Last year, over 400 physicians took the *Option* and it is anticipated that more will do so in the next few years. For the most part, these young physicians are anxious to establish a permanent practice and to become a part of the community. They see the *Private Practice Option* as an opportunity to begin their practices without further delay.

The HMSA-located communities benefit as well. Many of them have been unable to attract a physician and now have an opportunity to do so through the *Private Practice Option*. The physician's scholarship obligations may lead him to consider a practice opportunity that he may have ignored under other circumstances. And once established in a suitable private practice, the physician will be more likely to stay in the community.

The American Medical Association supports the *Private Practice Option* approach and has agreed to assist the National Health Service Corps by contacting communities and physician practices in Health Manpower Shortage Areas who are seeking additional physician manpower. The potential sites, if appropriate in terms of need and professional and community support, are then referred to the NHSC-obligated physicians for their consideration.

The AMA's Department of Health Care Resources is working with state and local medical associations, medical specialty societies and various community groups to identify, evaluate, and promote these practice opportunities. If you have or know of such a practice opportunity and would like help to recruit a physician, the AMA will be happy to provide this assistance.

If you would like further information, please contact: Phyllis Kopriva, Program Director, Department of Health Care Resources, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610, (312) 751-5111.

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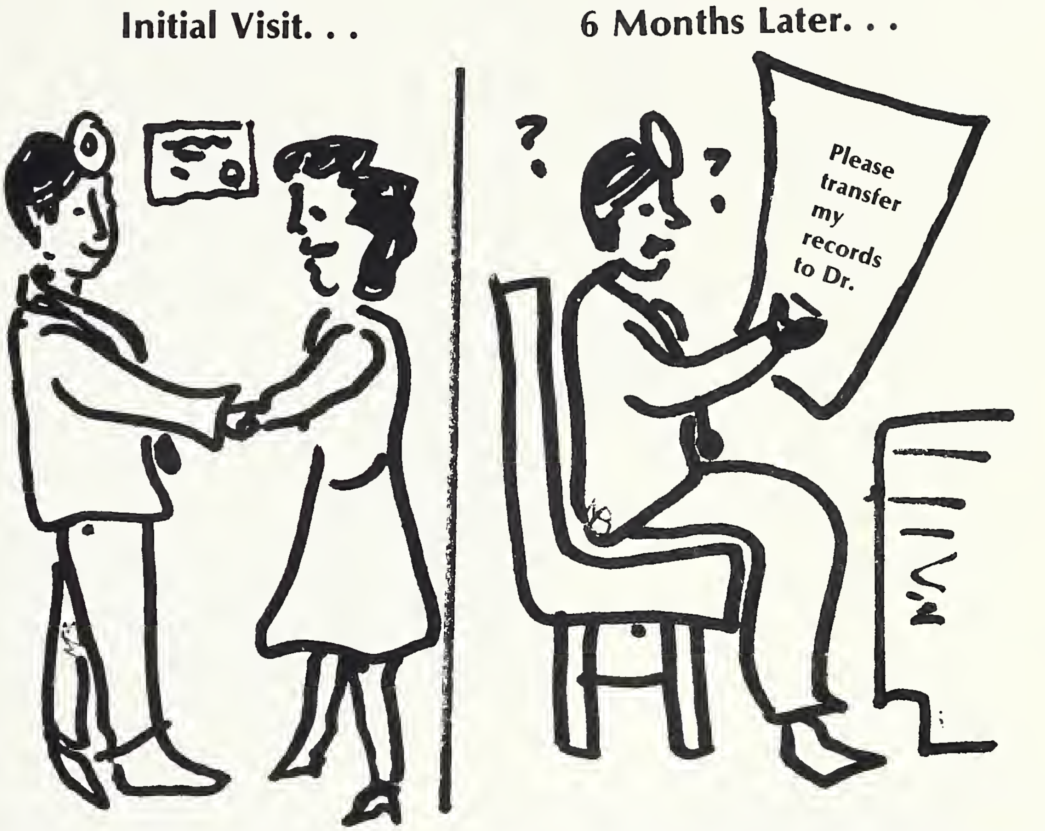
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Correspondence

itor:

In the October issue of *Arizona edicine*, Dr. William B. McGrath has editorial on "Patronizing" which is en better than his usual, superb andard. As doctors, we do—like wyers and military men—expect long ter retirement to be called "Doctor," udge," "Colonel," or "Captain." nere probably is no remedy for this. owever, during our active years of actice we can certainly pay attention Dr. McGrath's admonition that using e first name of a patient merely emonstrates our egotistical message at we are in control of the situation, rather than putting the patient at ease. When I was a very young doctor, I served four years at the National Leprosarium. Everybody called each patient by his first name, largely because all the patients took assumed names anyway when they were committed. In later years I provided medical and surgical care to psychotic patients in a state hospital. They became very fond of me, because I treated them as ladies and gentlemen, not as inmates. This included calling them "Mr." or "Mrs." This worked so well that when I started private, general practice eleven years ago in Casa Grande, I continued to call everybody "Mr.," "Mrs.," or "Miss." I found that a low income, sick, American of Mexican ancestry, who is paying for medical attention, deserves to be called "Mr. Rodriguez"—rather than "Pedro," "Senor," or anything else. He calls me "Doctor" and that makes us even; it creates mutual respect and confidence. This respect is even more appreciated by the patient who happens to be younger than the doctor.

Raymond C. Pogge, M.D. (retired)
Casa Grande

Briefly Noted

Ramon V. Buenaver, M.D., Tempe, has met the requirements set by the American Board of Pediatrics for recertification in general comprehensive pediatrics.

Alan L. Gordon, M.D., Phoenix, was recently elected to the Executive Committee of the Board of Governors of the American College of Physicians.

George F. Hewson, Jr., M.D., a newly appointed member of the Sports Medicine Committee of the American Academy of Orthopedic Surgeons, presented a course on the anterior cruciate ligament in Long Beach, California in December.

Jose Santiago, M.D., chairman of the department of psychiatry at Kino Community Hospital, has been appointed to the Joint Legislative Committee on Mental Health Services.

John S. Young, M.D., Phoenix, is one of five winners of the 1983 Samaritan Health Service Sammy Awards. Dr. Young helped to create the first spinal cord injury program in the nation in 1968 and currently serves as medical director, Spinal Cord Injury Consulting Service, Good Samaritan Medical Center in Phoenix.

Among the 550 physicians and surgeons who attained Fellowship status in the American College of Chest Physicians during 1982 were: **Clive Deutscher, M.D.,** of Yuma; and **Larry Spratling, M.D.** and **Brendan D. Thomson, M.D.,** of Phoenix.

Faculty for Current Perspectives III, Medical and Surgical Management of Coronary Artery Disease included (L to R) Gordon A. Ewy, M.D., Tucson; Carman H. Brooks, M.D., F.R.C.P., Scottsdale; and Frank I. Marcus, M.D., Tucson.

The Arizona Medical Association welcomes the following Physicians who recently became members.

Cochise

V. E. Quitmeyer, M.D.
Anesthesiology
308 Arizona Street, Bisbee
University of Illinois, Chicago—1945

Coconino

Burt Faibisoff, M.D.
Plastic Surgery
1300 North Rim Drive, Flagstaff
Rochester College—1975

Pima County

R. Mark Blew, M.D.
Orthopedic Surgery
6602 East Carondelet Drive, Tucson
University of Iowa—1973

Robert B. Dzioba, M.D.
Orthopedic Surgery
U. of A. Health Sciences Center, Tucson
University of Western Ontario—1970

Kenneth Iserson, M.D.
Emergency Medicine
U. of A. Health Sciences Center, Tucson
University of Maryland—1975

Robert Mammana, M.D.
General Surgery
U. of A. Health Sciences Center, Tucson
Georgetown University—1970

H. William Mott, M.D.
Orthopedic Surgery
601 North Wilmot, No. 98, Tucson
University of Utah—1969

Robert B. Smith, M.D.
Family Practice
6548 East Carondelet, Tucson
University of Utah—1969

Erica Wolf, M.D.
Psychiatry
1350 North Kolb Road, No. 219, Tucson
Columbia University—1977

Service Member

Jackson A. Saxon, M.D.
Anesthesiology & Radiology
4221 South Avenue Paisano, Tucson
Loma Linda University—1951

Resident Members

James F. Burke, M.D.
Family Practice
Scottsdale Memorial Hospital
University of Nebraska, Omaha—1979

Robert Lending, M.D.
Internal Medicine
T.H.M.E.P., Tucson
Hahnemann Medical College—1980

Gerald N. Plost, M.D.
Internal Medicine
U. of A. Health Sciences Center, Tu
University of Oklahoma—1979

Student Member

Diane Horning
University of Arizona

Affiliate Members

Edward C. Dale, M.D.
Psychiatry
Sun City

Sidney Rosenberg, M.D.
General Surgery
Sun City

Theodore Rubel, M.D.
Family Practice
Sun City

Theresa Rubel, M.D.
Psychiatry
Sun City

Meyer Rutgard, M.D.
Obstetrics/Gynecology
Sun City

L. M. Shapiro, M.D.
Internal Medicine
Sun City

o serving on the faculty for the Current Perspective III seminar were (L to R): ight C. Lundell, M.D. and Michael Vawter, M.D., F.A.C.C., Phoenix and Kenneth Raessler, M.D., F.A.C.C., Prescott, program chairman.

Jerome H. Targovnick, M.D., Phoenix, discussed "Facts and Fallacies about Diet and Obestiy" at the October "Health Talk" cosponsored by the Arizona Medical Association and Blue Cross & Blue Shield of Arizona. Dr. Targovnik also served as program director for ArMA's November Current Perspectives program, "Obesity, Diet, Nutrition and Disease."

1983 Sammy Award Winner Dr. John S. Young

Medical History

Extracts from the Publications of the Arizona Medical Association

(Continued)

John W. Kennedy, M.D.

We continue highlighting the history from the publications of the Arizona Medical Association and in this seventh installment begin with the year 1929.

Navajo-Apache County Medical Society

The Navajo-Apache County Medical Society met on February 2, 1929 in the offices of Dr. H. K. Wilson at Holbrook. The weather and an influenza epidemic kept the attendance small. Those who did attend were: Drs. P. D. Sprankle, Winslow; R. M. Stump, Winslow; T. J. Bouldin, St. Johns; H. K. Wilson, Holbrook; and J. W. Bazell, Winslow. At this meeting Dr. Stump was elected a member. Dr. Stump had three or four separate careers, you might say. He began his career in Winslow, later he established a practice in Phoenix, he spent five years in the Army during WW II, after that he returned to Phoenix and, presently he is in Sun City being the first physician into that community when it was established.

American College of Surgeons

February 13-14, 1929, the sectional meeting of the American College of Surgeons was held at the Westward Ho Hotel in Phoenix. The meeting consisted of delegates from Arizona, New Mexico, and Texas. E. Payne Palmer of Phoenix was the chairman of the meeting and governor of the local district.

Decreasing the Meetings

At a meeting of the Maricopa County Medical Society on March 27 a committee was appointed to work out a decrease in meetings. At that time there were two hospital staff meetings and two county meetings a month and the goal was to decrease these by at least two. *(This has a familiar sound.)*

Yavapai County Medical Society

In April 1929 the Yavapai County Medical Society, meeting in Prescott, reported that their average meeting attendance was 98.8%. There was continued interest in their case discussion methods which were familiarly known as the Yavapai County instruction system.

It was also reported that Dr. Edward S. Godfrey, Jr., who in 1929 was director of Communicable Disease Control for the New York State Health Department, discussed tularemia over station WGY in New York City. Dr. Godfrey had practiced in Bisbee. Later he was Territorial Superintendent of Health and in 1914 assisted and served on a committee to draft the charter for the city of Phoenix and he served as City Health Officer. In 1919 he was appointed to the position in the New York Health Department.

Quacks and Fakes

In an editorial in the July 1929 issue of *Southwest Medicine* it was stated "Phoenix suffers from a *proximity* of quacks, fakes, and cults more than any other city on the face of the globe, namely the city of Los Angeles, *where they all reside.* Since the Wilshire horse-collar and the Crane electrical belt were driven from Phoenix by a vigilant Chamber of Commerce—after they had mulcted the community of thousands of dollars, the Los Angeles quacks have made a practice of a quick cleanup and fast getaway. The most recent was the "cold ultraviolet ray outfit." *(Fifty years later—the more things change the more they remain the same).*

The Shockproof X-Ray Unit

In August of 1929 the Victor Company announced a Shockproof x-ray unit. This was reported as being the most important innovation since the invention of the Coolidge tube. The Coolidge tube was a vacuum tube that succeeded the old, so-called gas tube, which was first used in radiology. The present day x-ray tube is a direct descendant of the Coolidge type.

Cerebrospinal Fever

In September it was reported that during the first three months of that year there had been one hundred forty-two cases of cerebrospinal fever in Arizona, ninety-one of which occurred in Maricopa County. There was a plea for physicians to use convalescent serum intrathecally to reduce the mortality. It was the custom of some physicians, when these cases occurred, to take fifty or one hundred ccs of whole blood from a patient who had previously recovered from the disease and inject it into the buttocks of the current patient. Some physicians thought this had a beneficial effect.

Under Personals

Dr. Allen K, Krause, former prof of tuberculosis at Johns Hopkins Medical School, moved to Tucson assumed charge of the Desert Sanatorium.

Dr. C. O. West was now a full-tir epidemiologist in Arizona and had taken up his duties with the Maric County Health Department.

It was reported that Dr. Robert S Flinn of Prescott spent some time a Trudeau School of Tuberculosis at Saranac Lake, New York, and at the Diabetic Clinic of the Royal Victori Hospial in Montreal, Canada.

Dr. Norman Ross of Phoenix resi as resident physician to St. Joseph's Hospital Phoenix and entered priva practice with Dr. A. M. Tuthill. Dr. said he was told Dr. Tuthill was preparing to retire. He did retire—s 20 years later.

In 1929 the Arizona Industrial Commission established the highest schedule of services paid anywhere the United States. They also refused allow participation of "irregular practitioners." *(Pick up any daily newspaper in Phoenix or listen to th TV ads and you will see who now advertises for the industrial* case and *has a handsome fee schedule to go with it.)*

At the annual meeting in 1929 Ro S. Flinn of Prescott read a paper on "Treatment of Diabetes by the Gene Practitioner."

The most pretentious clinic organi in Arizona was the Thomas-Davis Cl in Tucson and they announced their removal to a new building at 136 Sc Street. Dr. C. A. Thomas and B. C. D together with eleven other individua made up the personnel.

The physicians of Bisbee, accordin to a city license law, were required t pay five dollars quarterly as a fee to practice in that city.

Dr. Joseph M. Greer, after a year postgraduate work in centers in the East, moved his office from Mesa to Security Building in Phoenix. His practice was limited to general and orthopedic surgery.

The Arizona Board of Medical Examiners accepted the applications Drs. Oscar Thoeny and Hilton McKo to practice in Arizona.

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J-9043-4 July 1981

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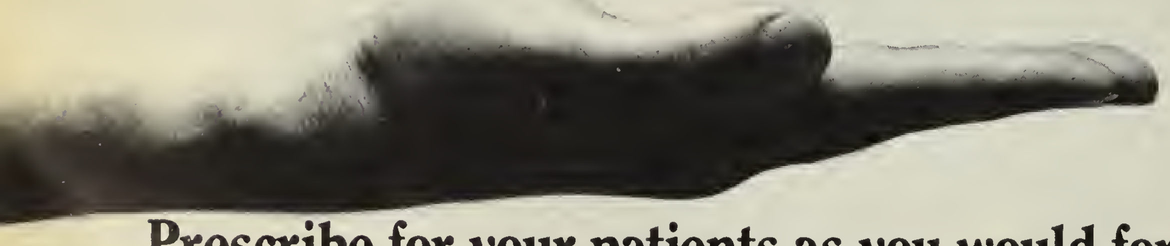

Prescribe for your patients as you would for yourself.

Write "D.A.W.," "No Sub," or "Medically Necessary," as your state requires, to make sure your patient receives the original allopurinol.

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Research Triangle Park
North Carolina 27709

ArMA Reports

e minutes appearing in this section ve been condensed. A complete copy them will be sent to any member questing one.

ENVIRONMENTAL HEALTH COMMITTEE

he Environmental Health Committee t on December 4, 1982. Chairman llis A. Warner, M.D. explained that Environmental Health Committee s previously called the Occupational alth Committee, whose scope was to l with economics and the Industrial mmission fees. The purpose of this eting was to map out some priorities d goals for the committee.

cting Director Arthur Aymar, of the ision of Environmental Health vices, Arizona Department of Health rvices, discussed the priority listings the department for the coming year. e outstanding priority was water, the lance were: contaminated oundwater, clean air, vehicle nissions, and hazardous waste. He entioned that Arizona is eleventh in e national ranking of states with bad llution. Legislation is being prepared the items.

The Committee decided on the llowing goals: 1) education of the ofession via publication, i.e., *Arizona edicine*, 2) advisory or consultation to e public for information, 3) political ork (DHS needs support with the gislature).

It was suggested that while ArMA es not have the resources to develop ean air and water standards, a review all data available could be made. It as also agreed that a panel should be rmed which could be called upon to swer environmental questions, etc. is panel should work through Dr. rn's office at the Department of ealth Services. Another suggestion as a monthly Q & A column in *rizona Medicine* explaining various oblems this Committee deals with.

It was decided to retain the asbestos scussion until another meeting.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

FEBRUARY

Current Perspectives V: Dilemmas of a Teenager
February 16. ArMA Offices. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 West Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmembers $20). Approved for 3½ hours of Category 1 credit.

Neurological Symptoms
February 17-19. Arizona Inn, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center. Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

9th Annual Frontiers in Ophthalmology
February 17-19. Mountain Shadows Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Christine Campbell, Medical Meeting Planner, St. Luke's Medical Center, 525 North 19th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

Conference on Medical Aspects of Boxing
February 18, 1983. Caesar's Palace Hotel, Las Vegas. Sponsor: American Medical Association and Association of Ringside Physicians. Contact: Dept. of Environmental, Public and Occupational Health, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610. Approved for 6 hours of Category 1 credit.

Sixteenth Annual Southwestern Clinical Pharmacy Seminar: Advances in Infectious Disease Pharmacotherapy
February 18-20. Ramada Inn, Tucson. Sponsor: U. of A. College of Pharmacy. Contact: Jack R. Arndt, Ph.D., College of Pharmacy, U. of A., Tucson. 9 hours of Category 1 credit have been applied for.

Ambulatory Electrocardiography: Clinical Applications, Methodology and Interpretation
February 18-20. La Posada Resort, Scottsdale. Sponsor: International Medical Education Corp. Contact: International Medical Education Corp, 64 Inverness Drive East, Englewood, Colorado 80112. Approved for 13 hours of Category 1 credit.

The Tenth Annual Barrow Neurological Symposium
February 24-26. La Posada Resort, Phoenix. Sponsor: St. Joseph's Hospital and Medical Center/Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., Barrow Neurological Institute, 350 West Thomas Road, Phoenix, Arizona 85013. Approved for hour per hour Category 1 credit.

Anesthesia for the 80's, 9th Annual Scientific Meeting
February 25-27. Doubletree Inn, Scottsdale. Sponsor: University of Arizona College of Medicine, Dept. of Anes. and Arizona Society of Anesthesiologists. Contact: Beverly Richter, Arizona Society of Anesthesiologists, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 15.25 hours of Category 1 credit.

Emergency Care Update -V
February 28-March 2. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

MARCH

Trauma Arts Festival '83
March 3-5. Grand Canyon Village, Grand Canyon, Arizona. Sponsor: Northern Arizona Council of Governments, EMS Division, National Park Service, Grand Canyon National Park. Contact: NACOG EMS, P.O. Box 57, Flagstaff, AZ 86002.

Sports Medicine Symposium
March 5. Good Samaritan Medical Center Amphitheater, Ancillary Building—Lower Level, Phoenix. Sponsor: Good Samaritan Medical Center. Contact: Good Samaritan Medical Center, Medical Education, 1111 East McDowell, Phoenix, AZ 85006. Telephone (239-5896). Russell P. Chick, M.D., Program Chairman, 277-3650. Approved for 8 hours of Category 1 credit.

Changes & Controversies in Pediatrics
March 3-6. Marriott Hotel, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

Sixth Annual Mid-Winter Symposium in OB/GYN
March 9-11. Scottsdale Hilton Hotel, Scottsdale. Sponsor: Maricopa Medical Center and Phoenix OB/GYN Society. Contact: Secretary, Phoenix OB/GYN Society, 3412 N. Fourth Ave. Phoenix, Arizona 85013. Approved for 14 hours of Category 1 credit.

Fifth Annual Symposium on Current Concepts in the Management of Chronic Pain Syndromes
March 12-13. Scottsdale Hilton Resort. Sponsor: Maricopa Medical Center. Contact: George Wallace M, D., Interim Chairman, Dept. of Anes., Director, Pain Clinic, Maricopa Medical Center, 2601 East Roosevelt, Phoenix, AZ 85008. Approved for hour per hour Category 1 credit.

Current Perspectives VI: Newer Aspects of VD
March 16. ArMA Offices, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 West Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmembers $20). Approved for 3½ hours of Category 1 credit.

4th Annual Sports Medicine Symposium
March 17-19. Arizona Health Sciences Center, Tucson, Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for hour per hour Category 1 credit.

Ninth Annual Maricopa Medical Center Urological Seminar
March 19-20. The Alamos Resort, Scottsdale. Sponsor: Maricopa Medical Center. Contact: Department of Surgery, Section of Urology, Maricopa Medical Center, 2601 East Roosevelt, Phoenix, Arizona 85008. Approved for 14 hours of Category 1 credit.

Ski & Study Seminar
March 19-26. Banff Springs Hotel, Banff, Alberta, Canada. Sponsor: Desert Samaritan Hospital & Health Center. Contact: CME Office, Desert Samaritan Hospital & Health Center, 1400 South Dobson Road, Mesa, Arizona 85202. Approved for 20 hours of Category 1 credit.

Medical and Surgical Management of the Inflamed Eye
March 24-26. Grand Canyon, Arizona. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, University of Arizona Health Sciences Center, Tucson, AZ 85724. Approved for 15½ hours of Category 1 credit.

Arizona Chest Symposium
March 24-26. Doubletree Hotel, Tucson. Sponsor: U. of A. Health Sciences Center. Contact: Sandy Younker, R.N., Chest and Allergy Clinic, Tucson Medical Center, P.O. Box 42195, Tucson, AZ 85733. Approved for hour per hour Category 1 credit.

Dermatology
March 26. Arizona Health Sciences Center. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

Dean's Clinical Rounds
March 30. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

APRIL

9th Annual Sports Medicine Symposium
April 8-10. Holiday Inn MetroCenter, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, AZ 85013.

Renal and Genitourinary Problems
April 16. Ramada Safari Resort, Scottsdale. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724 Approved for 8 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
April 19-21. Phoenix. Sponsor: ACLS, Az Affiliate American Heart Assn. and ArMA. Contact: Beverly Richter, Arizona Chapter, American College of Emergency Physicians, 810 W. Bethany Home Road, Phoenix, AZ 85013. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Update Primary Care
April 9-22. Arizona Health Sciences Center, Tucson. Sponsor: University of Arizona Health Sciences Center. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

MAY

Obesity and Nutrition
May 14. University of Arizona Health Sciences Center. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education of A. Health Sciences Center, Tucson, A 85724. Approved for 8 hours of Categor credit.

Current Perspective VII: Drug and Alcoh Abuse
May 19. Doubletree Hotel, Tucson. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 W. Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmemb $20). Approved for 3½ hours of Categor credit.

Advanced Life Support Recertification/Provider)
May 18-20. ArMA Offices, Phoenix. Sponsor: ACLS, Az Affiliate American Heart Assn. and ArMA. Contact: Beverly Richter, Arizona Chapter, American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, AZ 85013. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

SUMMER CME CRUISE/CONFERENCES ON LEGAL-MEDICAL ISSUES

Alaskan, Caribbean Mediterranean. Ten and fourteen days in July and August. Approved for 24 CME Category 1 credits (AMA/PRA). Distinguished professors. Fly round trip FREE on Caribbean and Alaskan cruises. Excellent group far on finest ships. Registration limited. Scheduled prior to 12/31/80—Tax deductible under 1976 Tax Reform Act. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Indian Hospital,
2nd Tues.— Maricopa County Hospital,
3rd Tues.—Good Samaritan Hospital,
4th Tues.—St. Joseph's Hospital.
Sponsor: Maricopa Medical Center (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D. 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session Category 1 credit.

ew of Forensic Pathology
rent Case, Special Topics
rsday, weekly, 11 a.m., 120 S. 6th Ave.,
enix, AZ. Sponsor: Arizona Society of
hologists. Contact: H.H. Karnitschnig,
., 120 S. 6th Ave., Phoenix, AZ.
roved for 1 hour per session Category
edit.

ARIZONA HEART INSTITUTE

N. 22nd St., Phoenix, P.O. Box 10,000,
enix, AZ 85064. Contact: Ravi Koopot,
.
ical Conference
diovascular Medicine
d Tues., 5:15 p.m., second floor
sroom

ARIZONA STATE HOSPITAL

E. Van Buren, Phoenix, AZ. 85008.
tact: Arnold L. Kendall, M.D.
H. Psychiatric Grand Rounds
Wed., 1:00-2:00 p.m., J-6 Conf. Rm.,
tact: Dr. Conger & Staff
ical-Pathological Conference
Wed., 1:30-2:30 p.m. General Services
., Conf. Rm.
lical Grand Rounds
Wed., 1:00-2:00 p.m., Medical Bldg.
f. Rm.

ARROW NEUROLOGICAL INSTITUTE

lical Education
row Neurological Institute of St.
eph's Hospital and Medical Center, 350
Thomas Rd., Phoenix, AZ 85013.
nsor: St Joseph's Hospital & Medical
ter. Contact: John R. Green, M.D.
roved for 1 hour Category 1 credit.
rology Teaching Conference
sdays, 8:30-9:30 a.m., Eighth Floor
f. Room.
rosurgical Morbidity Conference
dnesdays, 8:15-9:15 a.m., on first and
d and fifth, Eighth Floor Conference
m.
ro-Ophthalmology Conference
ndays, 7:30 a.m. in 8th floor neurology
ference room.
nal Injury Conference
dnesdays, 8:15-9:15 a.m., on second and
rth weeks, in Neuropathology Conf.
.—a multidisciplinary review of
nission by neurosurgeons, orthopedists,
rehabilitation specialists.
ropathology of Gross
ecimens Conference
rsday, 7:30-8:30 a.m. in the Morgue.
rology-Neurosurgical
days, 8-9 a.m., First Floor Conf. Rm.
ropathology or
roradiology Conferences
day, 9 a.m., Neuropathology in
ropathology Conference Rm.,
roradiology in First Floor Conf. Rm.
rorehabilitation Conference
sdays, noon, 8th Floor Conference Rm.
rosurgical Journal Club
urdays, 9-11 a.m. in Eighth Floor
nference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.
Surgical Department CME
4th Friday, 7 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 86016 Contact: Medical Staff Secretary for additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Education Bldg. West.

KINO COMMUNITY HOSPITAL, (THMEP)

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact. R. Fischer, M.D.

Medical Conference
Weekly, 12:30 p.m., Contact: Chief Medical Resident.

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m., Santa Cruz Room, Contact: George Wallace, M.D.

Medicine Conference
Daily 12-1 p.m., Contact: S. Schaffner, M.D.

Chest Surgery Conference
Weekly, Mondays, 1:30 p.m., Santa Cruz Room.

Hematology Conference
2nd Tuesday, 1:00 p.m., Contact: Walt Koppenbrink, M.D.

OB/GYN Dept. Grand Rounds
Weekly, Tuesday, 12 Noon, Santa Cruz Room.

Obstetrical Problem Conference
Weekly, Tuesday, 7:30 a.m., Yavapai Rm.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 a.m., Contact: Robert Ganelin, M.D.

Urology Discharge Planning Conference
Weekly, Tuesday, 11:30 a.m., Station 42.

Hand Surgery Conference
Weekly, Wednesday, 7:30 a.m., Santa Cruz Room.

Neurosurgery Discharge Planning
Weekly, Wednesday, 1:30 p.m., Station 42.

OB/Neonatology Seminar
Weekly, Wednesday, 7:30 a.m., Yavapai Rm.

Clinical Psychiatric Conference
Weekly, Wednesday, 11-12 p.m., Mental Health Annex, Rm. 1346.

Surgery Conference
Weekly, Wednesday, 7-8 a.m., Surgical Dept.

Current Concepts in Medicine & Surgery
1st Thursday, 1 p.m., Dr. Hospital Class Rm., Contact: Dr. Tamsky.

Cardiology Conference
Weekly, Thursday, 2 p.m., Santa Cruz Room.

OB/GYN Resident Conference
Weekly,Thursday, 12 p.m., Yavapai Rm.

GYN Endocrine Seminar
1st & 3rd Friday, 12:30 p.m., Santa Cruz Room.

OB/GYN Surgical Pathology Conf.
Weekly, Friday, 7:30 a.m., Yavapai Rm.

Orthopedic X-Ray Conference
Weekly, Friday, 7:30 a.m., Santa Cruz Room.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201. Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th floor auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th floor auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.

Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference Rm. A, Contact: N. Wendell Todd, M.D.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Loun

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Loun

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Loun

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Loun

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lour

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lour

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ, Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium

Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.

Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.

Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.

Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.

Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.

Psychiatry Conference
3rd Thursday, 7 a.m., Auditorium.

Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.

Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.

Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. o Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.

Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.

Emergency Medicine Lectures
Weekly, Thursday, 8 a.m., Century Rm. A.

Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A

Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.

etics Conference
kly, Monday, 12:30 p.m., Pediatric artment.

iatric Rounds
kly, Monday, Wed. & Friday, 10:30 a.m., iatric Department.

iatric Grand Rounds
Tuesday, 7:30-8:30 a.m., Contact: ipp Charlton, M.D.

Conference
ekly, Tuesday, 12:30 p.m., Pediatric artment.

lical Grand Rounds
ekly, Wednesday, 8 a.m., 1st Floor Conf. m.

ting Professor Formal Presentation
ekly, Thursday, 8 a.m., PIMC.

ting Professor Informal Presentation
ekly, Thursday, 9:30 a.m., 1st floor Conf.

ting Professor Formal Presentation
ekly, Thursday, 12:30 p.m., PIMC.

hrology Conference
ekly, Fridays, 12:30 p.m., Pediatric artment.

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

N. Wilmot Road, Tucson, AZ. Contact: G. Ramsay, M.D. Approved for egory 1 credit.

ily Practice Department Meeting
Tuesday, 12 p.m., Contact: . Monteforte.

hthalmology Morbidity/Mortality Conf.
Tuesday, 12:15 p.m., Contact: Kim vards.

rent Concepts in Medicine
kly, Tuesday, 12 p.m., Auditorium.

natology-Oncology Conference
Wednesday, 12:15-1:15 p.m., Contact: almon, M.D.

TUCSON MEDICAL CENTER (THMEP)

1 E. Grant Road, Tucson, AZ 85716. ntact: Eric G. Ramsay, M.D. Approved for egory 1 credit.

rdiology Conference
3rd, & 5th Mondays, 12 Noon, Contact: Maximov, M.D.

rmatology Conference
Monday, 5:00 p.m., Contact: Miller, M.D.

docrinology Conference
Monday, 12 Noon, Contact: Parker, M.D.

hrology Conference
Monday, 12 Noon, Contact: phen Seltzer.

inatal Conference
Monday, 7:30 p.m., Contact: ohman, M.D.

chiatry Department Meeting
Monday, 12 Noon, Contact: ward Winkler, M.D.

rgical Dept. Conference
Monday, 12 Noon, Contact: Peter Crowe, Jr., M.D.

matology Conference
Tuesday, 12 Noon, Contact: rald Giordano, M.D.

monary/Infectious Disease Conference
ekly except 4th, Tuesday, 12 Noon, ntact: B. Friedman, M.D.

Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.

Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.

Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.

GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.

OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.

OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.

Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.

GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.

Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.

Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact: Dr. Habib.

Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.

Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm. T-5, Contact: Dr. Zeller.

Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.

Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.

Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4-5 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4-5 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Endocrinology Seminar
Weekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Manning.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P.C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C.D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C.D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 no
AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC
Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Confere
Weekly, Wednesday, 8:00 a.m., Contac
Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm.

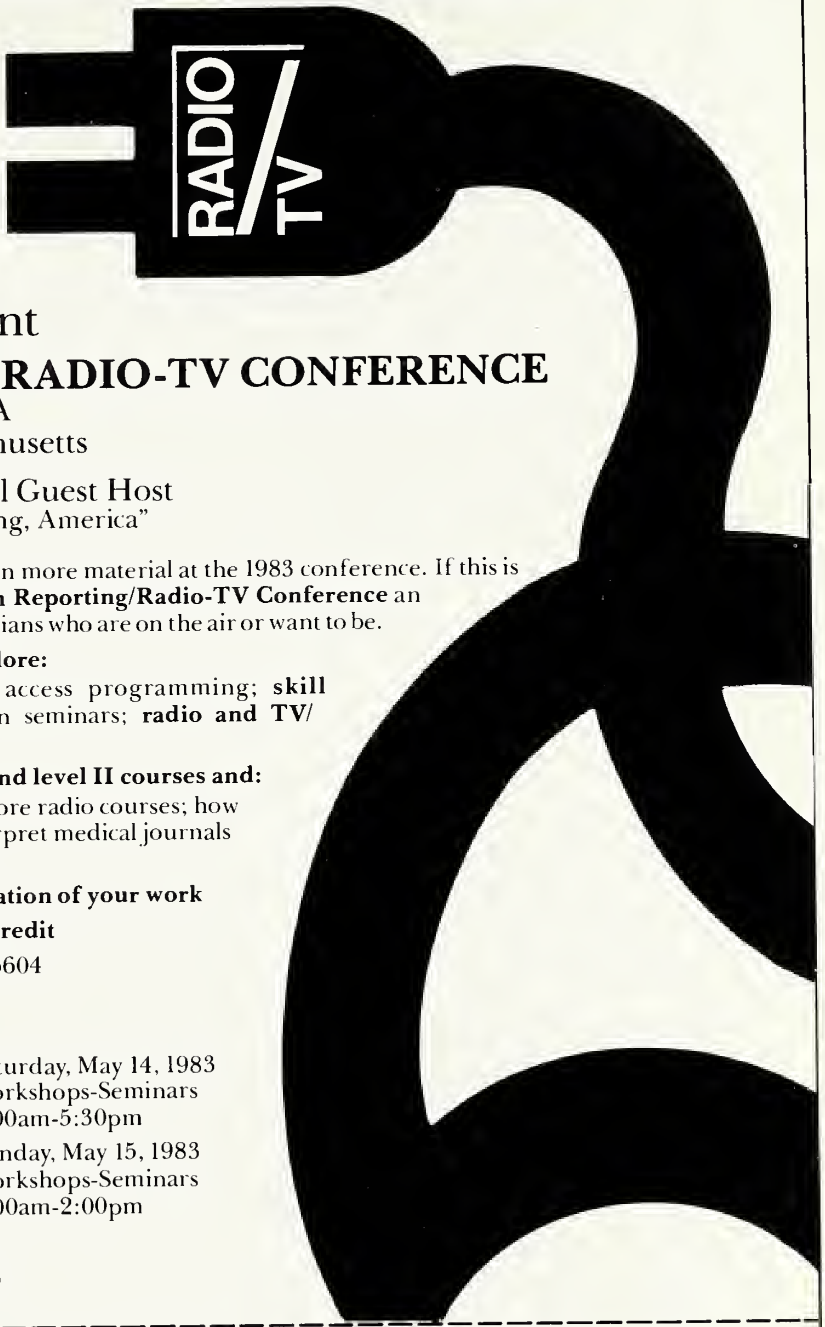
Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 no
AHSC & VA Hospital Contact: Dr. G.W
Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4-6 p.m., AHSC, Cor
Dr. J. Goldstone.

PLUG IN



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PROGRAM SCHEDULE:

Thursday, May 12, 1983
Welcome Reception
6:00-7:30pm

Friday, May 13, 1983
Workshops-Seminars
7:30am-5:30pm

Saturday, May 14, 1983
Workshops-Seminars
8:00am-5:30pm

Sunday, May 15, 1983
Workshops-Seminars
8:00am-2:00pm

Registration deadline April 12, 1983

HEALTH REPORTING/RADIO-TV CONFERENCE

Registration: $200.00 AMA members, $300.00 non-members, $50.00 students/residents.
Fee includes reception, all meals, workshops and materials.

Enclosed please find my check for $__________ payable to the American Medical Association, 535 N. Dearborn, Chicago, 60610

___ I will ___ I will not attend the reception on May 12, 1983,

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CITY ____________________

STATE ____________ ZIP ________

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departure date____________________
(check-out time: 1:00 pm)

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or 630 Craycroft, Tucson, Arizona 85711 745-0793

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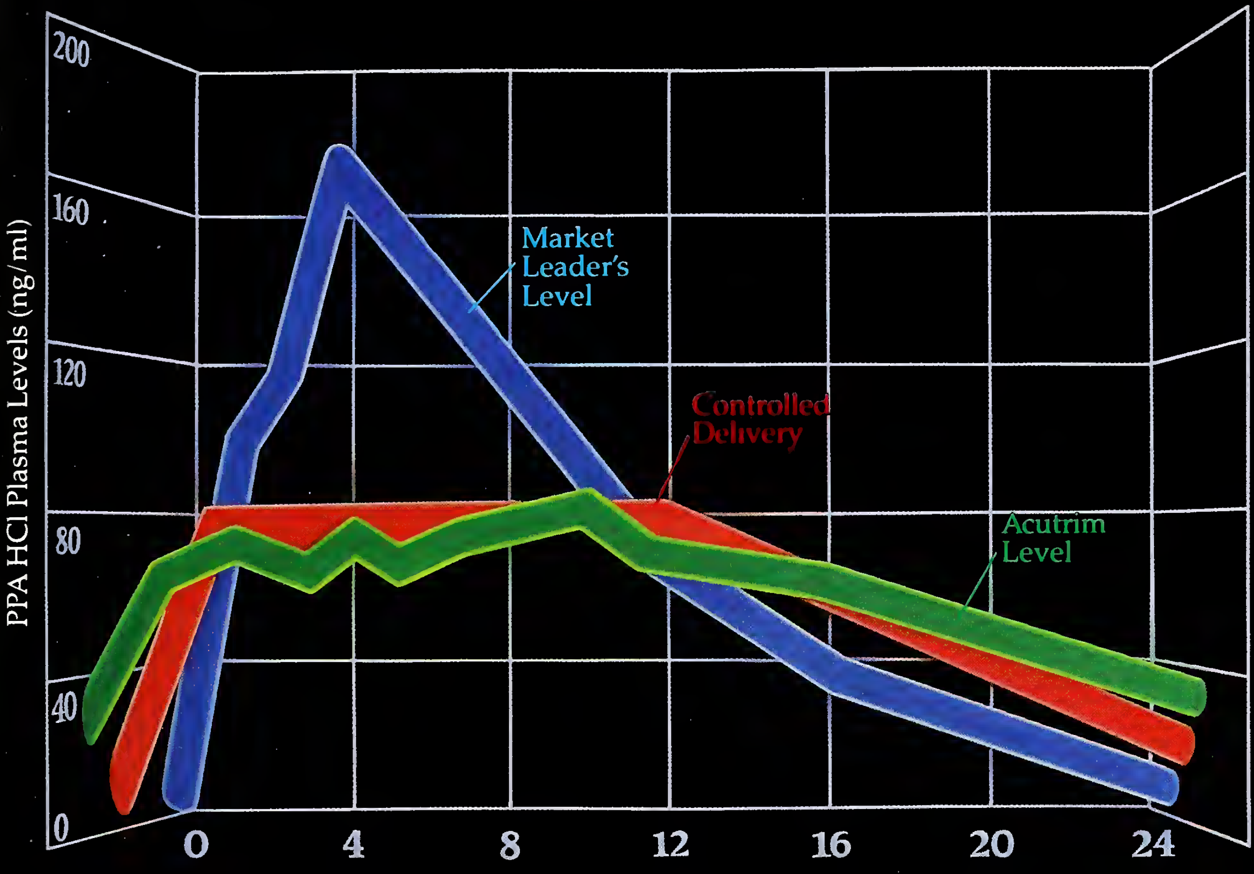

- **Controlled delivery of appetite suppressant for 16 hours**
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  Maximum plasma level produced by Acutrim is approximately 50% that of the leading appetite suppressant at its maximum level
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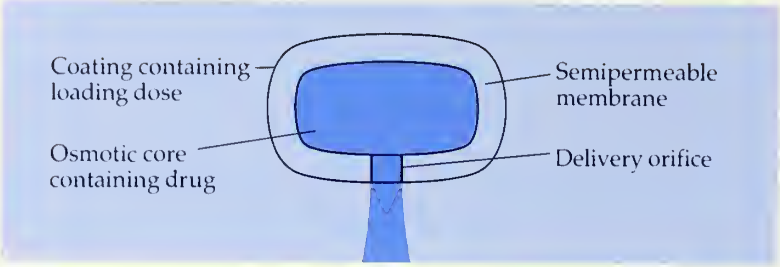

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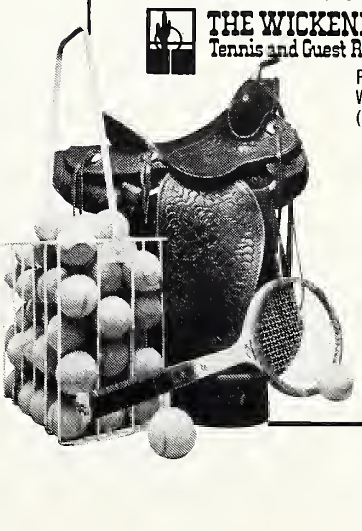

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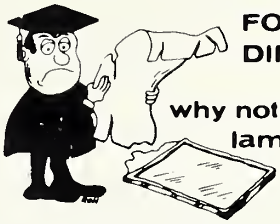

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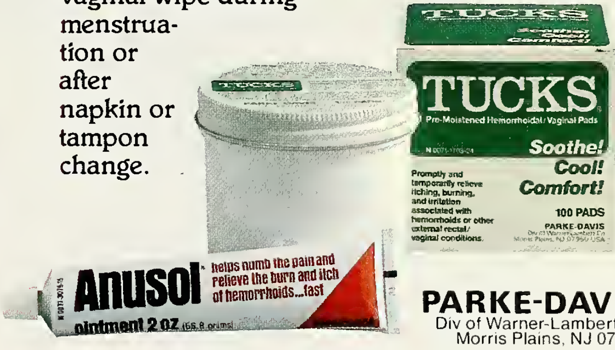
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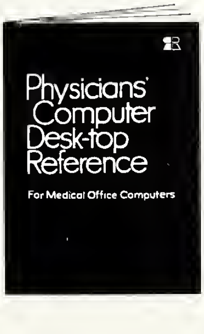
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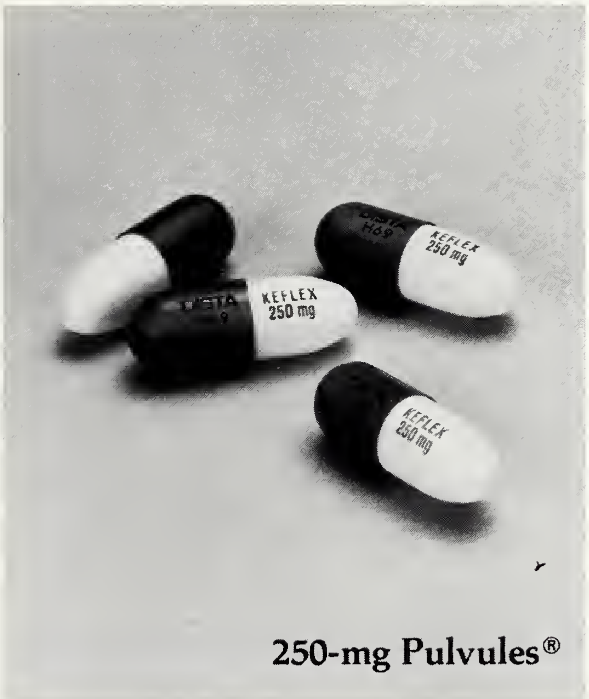

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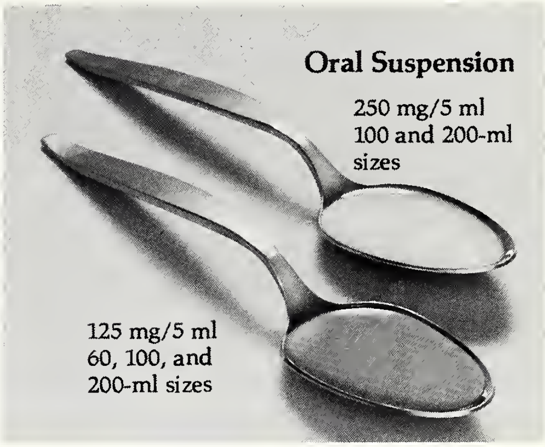

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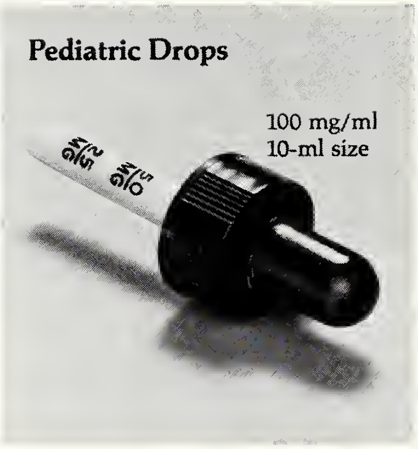

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Pseudomembranous colitis has been reported with the use of cephalosporins (and other broad spectrum antibiotics); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with antibiotic use. Treatment with broad spectrum antibiotics alters normal flora of the colon and may permit overgrowth of clostridia. Studies indicate a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis. Cholestyramine and colestipol resins have been shown to bind the toxin *in vitro.* Mild cases of colitis may respond to drug discontinuance alone. Manage moderate to severe cases with fluid, electrolyte and protein supplementation as indicated. Oral vancomycin is the treatment of choice for antibiotic-associated pseudomembranous colitis

produced by *C. difficile* when the colitis is severe or is not relieved by drug discontinuance; consider other causes of colitis.

PRECAUTIONS: General: Follow patients carefully to detect any side effects or unusual manifestations of drug idiosyncrasy. If a hypersensitivity reaction occurs, discontinue the drug and treat the patient with the usual agents, e.g., pressor amines, antihistamines, or corticosteroids. Administer cephradine with caution in the presence of markedly impaired renal function. In patients with known or suspected renal impairment, make careful clinical observation and appropriate laboratory studies prior to and during therapy as cephradine accumulates in the serum and tissues. See package insert for information on treatment of patients with impaired renal function. Prescribe cephradine with caution in individuals with a history of gastrointestinal disease, particularly colitis. Prolonged use of antibiotics may promote the overgrowth of nonsusceptible organisms. Take appropriate measures should superinfection occur during therapy. Indicated surgical procedures should be performed in conjunction with antibiotic therapy.

Information for Patients: Caution diabetic patients that false results may occur with urine glucose tests (see PRECAUTIONS, Drug/Laboratory Test Interactions). Advise the patient to comply with the full course of therapy even if he begins to feel better and to take a missed dose as soon as possible. Tell the patient he may take this medication with food or milk since G.I. upset may be a factor in compliance with the dosage regimen. The patient should report current use of any medicines and should be cautioned not to take other medications unless the physician knows and approves of their use (see PRECAUTIONS, Drug Interactions).

Laboratory Tests: In patients with known or suspected renal impairment, it is advisable to monitor renal function.

Drug Interactions: When administered concurrently, the following drugs may interact with cephalosporins:

Other antibacterial agents — Bacteriostats may interfere with the bactericidal action of cephalosporins in acute infection; other agents, e.g., aminoglycosides, colistin, polymyxins, vancomycin, may increase the possibility of nephrotoxicity.

Diuretics (potent "loop diuretics," e.g., furosemide and ethacrynic acid) — Enhanced possibility for renal toxicity.

Probenecid — Increased and prolonged blood levels of cephalosporins, resulting in increased risk of nephrotoxicity.

Drug/Laboratory Test Interactions: After treatment with cephradine, a false-positive reaction for glucose in the urine may occur with Benedict's solution, Fehling's solution, or with Clinitest® tablets, but not with enzyme-based tests such as Clinistix® and Tes-Tape®. False-positive Coombs test results may occur in newborns whose mothers received a cephalosporin prior to delivery. Cephalosporins have been reported to cause false-positive reactions in tests for urinary proteins which use sulfosalicylic acid, false elevations of urinary 17-ketosteroid values, and prolonged prothrombin times.

Carcinogenesis, Mutagenesis: Long-term studies in animals have not been performed to evaluate carcinogenic potential or mutagenesis.

Pregnancy: Teratogenic Effects/Impairment of Fertility — Category B: Reproduction studies have been performed in mice and rats at doses up to 4 times the maximum indicated human dose and have revealed no evidence of impaired fertility or harm to the fetus due to cephradine. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

Nursing Mothers: Since cephradine is excreted in breast milk during lactation, exercise caution when administering cephradine to a nursing woman.

Pediatric Use: Adequate information is unavailable on the efficacy of b.i.d. regimens in children under nine months of age.

ADVERSE REACTIONS: Untoward reactions are limited essentially to G.I. disturbances and, on occasion, to hypersensitivity phenomena. The latter are more likely to occur in persons who have previously demonstrated hypersensitivity and those with a history of allergy, asthma, hay fever, or urticaria.

(continued on next page)

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(continued)

The following adverse reactions have been reported following use of cephradine: G.I. — Symptoms of pseudomembranous colitis can appear during antibiotic therapy; nausea and vomiting have been reported rarely. Skin and Hypersensitivity Reactions — mild urticaria or skin rash, pruritus, joint pains. Blood — mild transient eosinophilia, leukopenia and neutropenia. Liver — transient mild rise of SGOT, SGPT, and total bilirubin with no evidence of hepatocellular damage. Renal — transitory rises in BUN have been observed in some patients treated with cephalosporins; their frequency increases in patients over 50 years old. In adults for whom serum creatinine determinations were performed, the rise in BUN was not accompanied by a rise in serum creatinine. Others — dizziness, tightness in the chest, and candidal vaginitis.

DOSAGE: Adults — For respiratory tract infections (other than lobar pneumonia) and skin and skin structures infections: 250 mg q. 6 h or 500 mg q. 12 h. For lobar pneumonia: 500 mg q. 6 h or 1 g q. 12 h. For uncomplicated urinary tract infections: 500 mg q. 12 h; for more serious UTI, including prostatitis, 500 mg q. 6 h or 1 g q. 12 h. Severe or chronic infections may require larger doses (up to 1 g q. 6 h.).

Children over 9 months of age — 25 to 50 mg/kg/day in equally divided doses q. 6 or 12 h. For otitis media due to *H. influenzae:* 75 to 100 mg/kg/day in equally divided doses q. 6 or 12 h but not to exceed 4 g/day. Dosage for children should not exceed dosage recommended for adults. There are no adequate data available on efficacy of b.i.d. regimens in children under 9 months of age.

For full prescribing information, consult package insert.

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”To prove that tuberculosis . . . . is caused by invasion f bacilli and . . . . the growth and multiplication of the acilli, it was necessary to isolate the bacilli from the ody; to grow them in pure culture . . . . , and, by dministering the isolated bacilli to animals, to eproduce the same morbid condition . . . . When the onviction that tuberculosis is an exquisite infectious isease has become firmly established among hysicians, the question of an adequate campaign gainst tuberculosis will certainly come under iscussion, and it will develop by itself.[1]' So spoke Dr. Robert Koch on March 24, 1882. His speech before the Physiological Society in Berlin announced the discovery f the tubercle bacillus and thus initiated the campaign oward its eradication.[2,3]

Tuberculosis is one of the oldest diseases known to ivilization. Spines of Egyptian mummies dating to 3,000 B.C. attest to its ravages. The Bible refers to it. Ulysses, in *The Odessey*, expresses thanks that a grevious onsumption did not take the soul from his body. Its ontagious nature was suggested by Artistotle's hetorical question, “Why is it, that those who approach a consumptive patient are stricken with consumption?” Hippocrates described it as a common, often fatal isease, localized chiefly to the lungs and ecommended treatment of rest, prayer, milk, exercise, and avoidance of inclement weather. Galen viewed uberculosis as an ulceration of the lung and advised est, plasters, gargles, and the calcium-containing red oral. He popularized such dietary supplements as eggs, pork, and the testes and wings of milk-fed cockerels and also popularized Stabiae (on the Bay of Naples) as a health resort. Writings of Horace and others suggest that tuberculosis flourished in ancient Rome, with the spread of the disease into adjacent countries promoted by the conquests of young Roman warriors.[4]

In the more modern era, Richard Wiseman (1622-1676) provided a classical account of scrofula or the “King's Evill.” The German, Francisus Sylvius (1614-1672) defined the role played by the anatomic tubercles in the infection. Richard Morton (1637-1698) offered proof that pulmonary tubercles produced one of the most widespread types of consumption to afflict the entire body. A French physician, Gaspard-Laurent Bayle, (1774-1816) accurately described various types of lesions in tuberculosis and stressed further importance of the tubercle in this disease. In 1868, another Frenchman, Jean-Antoine Villemin (1827-1892) conclusively demonstrated that tuberculosis is an infectious disease. Using fragments of tubercles and purulent fluid from tuberculous cavities taken at autopsy, he inoculated rabbits and, upon their sacrifice 3-1/2 months later, found peritoneal and pulmonary tubercles. He also demonstrated that inhalation of infected sputum can produce pulmonary tuberculosis while ingestion of it can produce intestinal infection. Meanwhile, Rene Theophile-Hyacinthe Laennec (1781-1826) described the physicial findings in patients with pulmonary tuberculosis.[5] Finally, the scene was set for Koch to expand Villemin's work and to demonstrate the tubercule bacillus in culture and to show the disease could be transmitted by that organism. Although growth of various bacteria on coagulated serum had often been accomplished, he allowed plates to incubate for several weeks and thus succeed with cultures of the slow-growing micro-organism.[3]

At an Executive Committee meeting in 1982, the officers of the Arizona Thoracic Society voted to commemorate the 100th Anniversary of Robert Koch's discovery of the tubercle bacillus with a collection of articles contributed by physicians and members of the lung association of this state. We are grateful to the Editor of *Arizona Medicine* for publishing this collection.

From: Arizona Thoracic Society, Medical Section of the Arizona Lung Association. Reprint requests to Arizona Lung Association, 1239 East McDowell Road, Phoenix, Arizona 85006.

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Arizona's Reputation As A Health Spa

Clyde L. Gittings

In this, the 100th anniversary of Robert Koch's discovery of the tubercle bacillus, it seems appropiate that we look at the interrelationship between tuberculosis and the growth of Arizona.

Pulmonary patients throughout North American have flocked to Arizona, seeking symptomatic relief from their illnesses believing the climate to be a panacea which might enable them to live normal lives again. Many of the chronic lung disease patients who move to Arizona do so without ever having been here before. They take on faith the assertion that the desert southwest has clean air and blue skies, that Arizona is a health resort. The dust, pollen and smog of urban areas belie that myth; yet the belief persists. Why then do they continue to come?

Arizona's curative reputation was born in the 19th century, when tuberculosis was still called consumption, phthisis, or the White Death. Arizona was by no means the only geographic area selected as a salubrious home for the consumptive. Based on the work of Dettweiller, in Germany, it was believed that high altitudes were better for the consumptive because there was less atmospheric pressure to stress the lungs. Just as great health spas grew in Germany, so grew the health resorts in Colorado. In the 1850's the Colorado Rockies attracted tubercular patients in large numbers.

Denver, because of its booming mining economy, was the first city to draw the crowds. Later, in the 1870's the resort town of Colorado Springs grew out of the plains around the natural springs at Manitou. To the newly built hotels rushed the sick—and rich—eastern establishment.

Students of the new science of climatology advoc
the mountains for lung patients. Theorists at best, t
felt the cool, dry air of Colorado was ideal for tuberc
lungs. Through their efforts and by virtue of t
publications, Colorado became known as
Switzerland of the Rockies to the sick—but only to
wealthy sick, for the poor could not afford to leave t
homes and bear the expenses of travel.

Colorado was not the only state to benefit from
wealthy consumptive. California, too, became pop
and attracted them.

From the late 1850's until the transcontinental railr
was completed, southern California was a mecca to
new rich from the gold fields of northern California
eastern Nevada, and a few hearty souls who co
survive the grueling trip around the Horn of So
America. Tuberculosis, the great medical leve
crossed all social and economic lines to strike even
rich mining and mercantile classes that thrived
California.

Los Angeles and San Diego also had climatolog
who extolled the virtues of warm seaside living.
southern California, however, the wealthy were for
to live in shacks and tents until more luxuri
accommodations could be built after the Civil W
Luxury did come though; and by 1880, Los Angeles a
southern California became known as the "Italy
America" and the capital of the Sanitorium Belt.

Consequently, the idea of healthy climates for all v
entrenched in Colorado, California and even N
Mexico by the late 1860's. Arizona was not yet look
upon as the gold at the end of the rainbow. There w
several problems. It would take more than healt
seeking consumptives to settle the Arizona frontier.

The upper Sonora Desert was settled by the Spaniar
in the late 17th and early 18th centuries, Tucson bei
the northernmost settlement with a garrison. With t
northward settlement came the Jesuit priests w
attempted, without much success, to "civilize t
natives." Within a short period of time, the Jesuit fell in
disfavor and were replaced by Franciscans. It was t
Franciscans who built the missions that are so w
known today. The Franciscan friars (Father Kino was t
best known of that group) were only slightly mo
successful with the Indian population. If not converte
at least the Indians were friendlier. Possibly the be
thing to come about was the friendly relations that we
created with the Papago, Maricopa and Pima tribe
Bitter enemies of the Apache, at least these small trib
would remain friendly to the Anglo during his westwa
migration.

In 1853 the United States, through the Gads
Purchase, acquired the land south of the bend on t
Gila River (the area just south of Phoenix). Tucson w
included in the purchase; so the Spanish garrison left t
Old Pueblo and was replaced, after a fashion, by
hundred or so U. S. Cavalry. The Arizona Territory d
not amount to much in the minds of Congress at t
time, so further garrisoning of troops was delayed—s

From: Clyde L. Gittings, Program Associate, Arizona Lung Association, 1239 East McDowell Road, Phoenix, Arizona 85006.

delayed, in fact, that until the start of Civil War
tilities, the Tucson garrison did not grow at all.

ven though southern Arizona was static, the north
not. Gold was discovered and the mountain
ulation began to swell. Prescott became a
ulation center and the state was bracketed with
s. Silver mines were prospering in southern Arizona
er the bluffing—if intoxicated—eye of the U. S.
ny; and the gold mines of the north began to flourish.
h what little security there was, settlers very slowly
an to move toward the desert.

would take a large westward migration to settle
zona. The Civil War had stopped what movement
e had been prior to 1861. It seemed that only a
ulation willing to settle in the deserts would
vince Washington to send troops needed for
tection. But the troops were not available until 1865.
that year, it was possible for groups of thirty or more
ravel safely in southern Arizona. More than safe
el was needed, however, for people to be able and
ing to settle down to farm and ranch, or for miners to
e up the pick, the Apache would have to be subdued.
key to subjugation lay in a populace that would
ify soldiers.

he Army did return after the war and either increased
eestablished its presence at Ft. Whipple Prescott, Ft.
che, Camp Goodwin, Tucson, Camp Grant, Florence
Ft. McDowell. With a renewed army presence, the
was at last clear for migration to begin. Begin it did—
vly.

Miners began to return to Sonora and Arizona. A few
lers returned to Tucson.

Vhile Colorado and southern California gained in
e and fortune through lung patients, Arizona was
receiving bad press about the Indians' unrest. An
y wife, Josephine Clifford, wrote: "Could that
ful scourge, the Apache, be removed, there are
tions of Arizona that would soon vie . . . . with the
st populous sections in California." An earlier
zona traveler, writer J. Ross Browne, pointed to
other element causing problems. "Men who were no
ger permitted to live in California," he wrote, "found
climate of Tucson congenial to their health . . . . every
n went armed to the teeth and street fights and
ody affrays were of daily occurrence."

t was obvious to all outside of Arizona that even
ple in perfect health could reach the Territory and
e it quickly. The image had to change.

hose consumptives who were physically able,
veled the northern route by stage or wagon, then by
or ship down the coast to Los Angles, Santa Barbara
San Diego. After 1867, the entire trip could be made
rail. Until 1875, to reach Arizona required a ten day
from Los Angeles or San Diego to Yuma, and another
ek was needed to reach Tucson.

Vith the end of the Civil War came westward
gration, not only of health seekers, but of the land
ngry immigrants. Most went to northern areas where
Indian had been nearly subdued, but Arizona began
to receive its share in the form of silver miners returning to the known lodes.

By 1874, the state of California and territories of Colorado and New Mexico were firmly entrenched as places to go to cure lung illness. In Arizona, however, although the Indian situation was more or less in hand, transportation remained a major problem.

The eastern (and western) railroad barons, in their greed to capture as much public land as possible without expenditure of their own funds, had long held up the building of a southern railway.

In the East, Thomas Scott was the figurehead of the Texas and Pacific Railroad. Scott, at one time a wealthy railroad magnate, had lost his fortune due to the machinations of one of the most famous crooks of American history, Jay Gould (himself a consumptive). It was Scott, through the T&PRR, who had a charter to build track through Arizona. Unfortunately, Gould in fact owned both Scott and the railroad.

In the West, another of the infamous railroad barons, Collis P. Huntington, was planning to move east. Huntington, it should be pointed out, controlled every foot of track in California. He had lied to, stolen from and cheated nearly everyone with a dollar to invest. But he was rich, and he did not want a southern route into California that he did not control, as had happened in the north with Vanderbilt and the Northern Pacific.

The problems of a southern route were that the T&PRR had claimed the grant lands but never built on them. Secondly, the stock of the road was so badly watered that capital was not available to build until some of the grant land could be sold, or more shares of stock issued. Huntington, on the other hand, wanted to build to the east, but he had no charter. To prevent Scott from building, he bribed appropriate officials in Washington; and Scott's charter was revoked. He could not, however, gain one for himself.

A spur of Huntington's Southern Pacific reached Yuma in 1875. He needed a state franchise, and he resorted to bribes to get one. Huntington wrote a letter to his confederate in Arizona, David Colton. He was specific in his request: "If we had a franchise to build a road or two through Arizona (we controlling, but having it in the name of another party) . . . . it could be used against Scott. Cannot you have Stafford call the legislature together and grant such charters as we want at a cost of say $25,000? If we could get such a charter as I spoke to you of, it would be worth much money to us." With the respected Governor Stafford (a TB patient who had come to Arizona for his health) on his side, Huntington got his charter. Now all he needed was permission to cross Indian land. Scott was able to muster enough support in Washington to stymie Huntington on that issue.

Instead of waiting or giving more bribes, Huntington threw a bridge across the Colorado River at Yuma—even though it was illegal—and built across reservation land. His theory was that he would get permission later. He was right. The blocking order Scott had won against him was lifted and an executive order authorizing construction was issued on October 9, 1877. Recognizing that he had lost the battle, Gould (and Scott) made peace with Huntington, and the Southern Pacific and the Texas Pacific joined lines at El Paso in 1882.

With the coming of the railroad, the Arizona frontier began to disappear in earnest. Doctors in Arizona began to let it be known that they believed the territory was possibly a haven for the sick. Dr. G. S. Rose, who practiced at Yuma, was quoted in the April 11, 1874, *Tucson Citizen* as saying he was "well satisfied from observation and practical experience that Arizona would become the Mecca for persons afflicted with lung disease."

While there seems to be no written official record of it, there is a possibility that the U. S. Army recognized Arizona's potential as a healing climate. At least one army man did. He was Dr. B. G. McPhail, post surgeon at Camp Grant. Dr. McPhail wrote in the *Virginia Medical Monthly* in 1873, "I have not seen a case of pneumonia or other serious disease of the respiratory system. I have met soldiers and officers who were suffering from almost every form of lung disease on their arrival in the Territory: phthisis in its different forms—in several, far-advanced—bronchitis, asthma, impaired function from old pneumonia, pleurisies, etc., and in every case marked improvement has followed after a short residence here.

Rivalry also began to appear between various areas in the Territory as the Indian bowed from the scene and the railroad appeared stage west. The *Tucson Citizen* of April 18, 1874, chided a Judge Knapp on writing a short treatise on the "Healthy Arizona Climate" and giving the impression that the Mesilla Valley was the only place in the Territory where conditions were ideal for the sufferer of phthisis or consumption.

The numbers of health seekers coming to the Arizona Territory were sporadic throughout the 1860's and 1870's, but all that was to change with the coming of the railroad to Yuma. And, with construction across the river, for the first time most areas of Arizona were accessible to all. The westward migration to the desert Southwest became persistent and migration was promoted by men who saw the money in health spas.

Tucson, already well established, saw a leap in its numbers of new citizens. Phoenix was established as a viable entity in 1880 and almost at once became a mecca for consumptives. By 1890, TB patients were not just trickling in—they were coming in droves. Regretfully, in the minds of the farmers and ranchers as well as the city dwellers, consumptives entering Arizona were usually penniless.

There was a reason for the poverty of the sick entering the southwest desert.

For years, the states and territories of Colorado, New Mexico and California had built resorts and hotels to accommodate the TB patient. True, these resorts were for the wealthy; but the poor could benefit from the rich because there was a capital base which could be use minister to the poor. Also, sanitoriums in these ar were experienced in working with the sick. Jobs w available to those able to work because there wa much larger population and a variety of indust available.

On March 24, 1882, Robert Koch presented to Physiological Society of Berlin, his previous ye discovery of the tubercule bacillus. It was one of great discoveries in the history of medicine.

But it was not a boon to the poor person, for now world knew for sure that tuberculosis was infectious would change the way people would look upon consumptive.

Suddenly, western cities like Colorado Sprin Denver, Los Angeles and San Diego would no long welcome the lung patients. The owners of resort hot learned that people who were *not* ill had money t and were willing to spend it. No longer were the poor find work among people who did not have their disea

The sanitorium movement would take a quantum le in the 1890's in the United States, but during the 188 the consumptive was an outcast. In this setting, Arizo became an attractive alternative. There were f people; there was a lot of sunshine; and there were accommodations. The farmers and ranchers we deluged with requests for work and lodging.

By 1890, Phoenix had a population of fifteen thousan Hundreds of consumptives arrived yearly. According Dr. Earle Bullock, himself tuberculous, doctors Phoenix said four-fifths of the lung patients who cam were incurable. But so many came, that labor becam incredibly cheap. Wages were, in the course of tim nearly nothing. The ranchers rented out furnished ter and shacks so that "at the outskirts of the irrigated pa of the valley, and extending to the foothills, there we tents of all sizes and descriptions." For those who cam without money and could find no work, welfare was th only hope. Even that had limits, as Bullock went on say. "The supervisors say that the poor in the Almshou cost the county $20,000 a year, and three-quarters of th is spent in the care of ailing consumptives."

Statements like this were not all that uncommon other counties in Arizona. In fact, citizens of Yum complained of two men who left Prescott in 1873 to tak advantage of the charitable health facilities in Yuma. Th greatest complaint was that one of them was a Presco property owner.

Phoenix was not alone in the quest for health. Tucson, the " . . . . white tents stretched from the cit limits to the Catalina mountains." Even avid promote of Tucson, like Patrick Hamilton, had to live in ten because other accommodations were nearl nonexistent.

In America's last two contiguous territories, little wa done for the consumptive. In fact, it would be fair to sa in Arizona, nothing was done. The best the territory ha to offer was the tent cure. To really help oneself, it wa necessary to lie about in the shade and rest. Some in th advocated working on ranches, but that, when work d be found, was far to strenuous for the average umptive.

the 1890's the major area for consumptives in enix was in what is now known as Sunnyslope. The was literally a sea of tents. In Tucson, the area wn as "Bugville" was the same. The consumptives a constant nuisance to farmers, since they were the owners and, therefore, thought to be able to give douts or light work. The more who came, the more were rejected, because people in Arizona had also ned that TB was infectious.

s their illnesses worsened and they neared death, went into the cities and "prostrated themselves re the public and private charities for succor while lived and for interment when they perished." Even most hardened could not help but feel for these r, dying people. But that did not stop the ranchers businessmen from putting up signs declaring sumptives unwelcome.

Phoenix, Dr. Warner Watkins put the blame for the e influx of sick squarely on the shoulders of the ern doctors who held out the hope for cure when re was none. It was thought by the Arizona medical blishment that the doctors in the East would often d their patients west so they would not have to watch r failures die. So many died that, in Dr. Watkins' rds, " . . . . our potter's field is a veritable monument the guilt of all practitioners who are guilty of practice."

he fact that this situation went on for twenty years is credit to anyone. Fortunately, by the turn of the tury, private groups had begun to see the need for toriums; and many were built. These provided much ded relief to the counties and city charity houses.

y 1906, there were three such Arizona facilities: rcy Hospital, in Phoenix, 20 beds; Palm Lodge itorium and Tent Colony for Incipient TB, in Phoenix, beds, Henry M. Stone, Physician—private; and St. ry's Hospital, Tucson, 30 beds. (St. Lukes of the ert, in Tucson, was not begun until 1917).

hese facilities alleviated the problem somewhat, but nearly enough. Transient patients still came in large nbers. Finally, in 1919, the people of the state saw the d for and formed the Anti-tuberculosis Association. main function was to explore the problem and mpt a solution. Nothing was solved.

y this time, the first World War was over and the men e returning home—many with TB. Thousands of others were put into veterans hospitals with TB during the war, and there was a valid complaint that they were being released too soon. Soldiers released too soon suffered recurrences and readmittance to hospitals and sanitoriums became necessary. The sanitorium movement was nation-wide. But it was taxed by the influx of veterans. With few exceptions, state governments had seen their responsibility and established tax-supported hospitals for consumptives. Regretfully, Arizona was not one of them. We would not have a state sanitorium until 1933.

How, then, did the myth of Arizona as a mecca for lung patients develop?

There is a simple and very fundamental answer: Some people got better. While statistics do not exist on the numbers of people whose health indeed improved, Bullock was probably correct—probably eight out of ten DIED. The old adage that "dead men tell no tales" is less appropriate than perhaps saying that survivors talk too much.

Many of our state's most successful men and women were survivors of tuberculosis. Perhaps they conquered their illness because they were "survivors" in a more general sense. Their survival and success became wrapped up in the mystique of Arizona as a health mecca. No one questioned their claims. After all, it was good for the economic health of the state.

Even now we are less than candid about our problem with year-round allergic pollenosis and endemic coccidioidomycosis.

And so, the myth continues as it started. Its foundations are starting to crumble, however.

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Public Health Management of Tuberculosis

Richard L. Coppedge, M.D., M.P.H.

The current management of tuberculosis rests on the concepts of surveillance and containment.[1] Surveillance refers to activities related to finding cases of tuberculosis and guiding them into the health care system, learning about the existence of cases already in the system, and tracking all cases. Containment is the protection of persons exposed to cases of tuberculous disease.

Finding tuberculosis cases in Arizona begins with exhaustive interview of a newly diagnosed case. The purpose is to identify all contacts. The contacts are screened and treated according to current standards of care.[2] Associates of persons with clinically significant tuberculin test reactions are also identified, screened and treated. Persons with clinically significant tuberculin test reactions are referred to as reactors if the date of infection is unknown. They are defined as converters if the tuberculin skin test was known to be negative within the two years prior to the positive tuberculin test reaction.

More than half of all new cases are diagnosed because they present themselves to health care providers with symptoms of weight loss, night sweats, cough, fever or sputum production. The risk groups which also produce some cases are the contacts of known cases and the associates of persons with clinically significant tuberculin test reactions.

State law, Arizona Revised Statute 36-711ff, still provides for the care of tuberculous persons without regard to their indigent status. Cases are guided into the health care system through morbidity reports provided by health care practitioners, and by laboratory repo
suspected or confirmed tuberculosis.

Cases in the health care system are monit
continously by local tuberculosis programs in the co
health departments and the service units of the In
Health Service. Computerized patient registries
updated continuously to assess the continuity of ca
each patient. The patient registries are used by l
program staff to track all cases. A state employed pu
health nurse monitors hospitalized tuberculous per
to assure continuity of care upon discharge to outpat
status. The current standard drug regimen is
months for an adult uncomplicated pulmonary ca
both rifampin and isoniazid are in the drug regim

Protecting persons exposed to cases of tubercu
disease usually involves assuring that each pat
follows an adequate course of chemother
Simultaneously, the exposed persons may follo
course of chemoprophylaxis for ten to fifteen weeks
a course of preventive treatment for at least
months.[5]

There were 300 new cases of tuberculosis confirme
Arizona residents in the calendar year 1982. An an
statistical report showed that most cases were peopl
middle age and older.

It is expected that most persons with positive sput
will convert to negative sputum within six months. Th
were 90 persons whose positive sputum was monito
through the end of 1981. Eleven people died or mo
away and of the remaining 79 people 89% were case
negative sputum within six months. The subto
showed that county health departments had
conversion index of 88% (65 cases); Navajo Area of
Indian Health Service, 86% (nine cases); Phoenix Are
the Indian Health Service, 93% (16 cases).

All cases should be reviewed monthly by a physic
or by a physician-supervised health care provider.
index of continuity of drug therapy of cases at the en
1981 was 88% of 403 cases. There were 13 persons still
drugs because therapy had been interrupted; otherw
therapy would have been completed. Another
people had stopped taking antituberculosis drugs[12]
had been lost (9).

There were 698 tuberculosis cases under supervisi
in Arizona on July 1, 1981. In the following six months
patients were added to the state-wide case register a
307 were closed to supervision:

Supervision complete	2
Moved out of jurisdiction	
Lost	
Died	
Diagnosed non-TB disease	

There were 646 cases under supervision on Decemb
31, 1981, of whom 590 were at home with
chemotherapy recommendation. Of the 590, 432 of 7
were recommended to receive two or mo
antituberculosis drugs. All but one were currently
chemotherapy. The bacteriologic status of the 432 wa

From: Richard L. Coppedge, M.D., M.P.H., Assistant Director, Arizona Department of Health Services, Division of Disease Control Services. 1520 West Adams Street, Phoenix, Arizona 85007.

Table 1
Arizona Tuberculosis Program
Number of New Cases

Year	Number	Year	Number
1922	82	1956	962
1923	1855	1957	841
1924	1084	1958	736
1925	937	1959	761
1926	1025	1060	713
1927	1234	1961	694
1928	943	1962	703
1929	1115	1963	631
1930	1833	1964	652
1931	1274	1965	573
1932	1027	1966	503
1933	957	1967	436
1934	1178	1968	472
1935	1479	1969	452
1936	1007	1970	470
1937	1162	1971	459
1938	1298	1972	396
1939	1183	1973	416
1940	1247	1974	349
1941	1257	1975	422
1942	1275	1976	405
1943	1427	1977	358
1944	1083	1978	406
1945	1298	1979	417
1946	1405	1980	342
1947	2185	1981	342
1948	2357	1982	300
1949	2433		
1950	2631		
1951	2772		
1951	2772		
1952	2865		
1953	1518		
1954	1532		
1955	1636		

Table 2
Arizona Tuberculosis Program
Number of Cases Completing Chemotherapy
On Reservation and Off Reservation

	Number Cases Completing Chemotherapy	
Year	On Reservation	Off Reservation
1972	not available (n.a.)	152
1973	n.a.	203
1974	n.a.	164
1975	n.a.	165
1976	n.a.	125
1977	n.a.	163
1978	n.a.	151
1979	55	146
1980	59	134
1981	59	188

Positive bacteriology in the three months prior to the end of December	41
Negative bacteriology in the three months prior to the end of December	153
Bacteriologic studies not recommended	238

Containment begins when the newly diagnosed case is interviewed for contacts. There were 342 new cases confirmed in 1981. Interviews revealed that 275, (80%), of the 342 new cases had contacts. The interviews identified 2109 contacts of whom 2044 or 97% were examined. Significant tuberculin test reactions were found in 612 of the contacts. There was no other evidence of disease and 73% of them began single drug preventive treatment with isoniazid. Contact investigation revealed eventually that 13 people, or 0.6% of the contacts identified, were cases of tuberculosis.

At the end of December there were 364 contacts of new cases under supervision as well as over 3625 other infected persons, clinically significant tuberculin test reactors, in addition to the 646 tuberculous cases discussed above. The public health local tuberculosis

Table 3
Arizona Tuberculosis Program
Case Rate Per 100,000 Population
By Calendar Year

Year	Rate	Year	Rate
1922	23.2	1956	89.0
1923	512.0	1957	73.1
1924	290.0	1958	51.1
1925	244.0	1959	60.4
1926	259.0	1960	54.2
1927	305.0	1961	70.4
1928	227.0	1962	63.2
1929	262.0	1963	51.6
1930	421.0	1964	42.0
1931	287.2	1965	35.4
1932	228.3	1966	30.3
1933	209/7	1967	26.5
1934	254.6	1968	28.4
1935	315.3	1969	26.0
1936	211.8	1970	26.5
1937	241.2	1971	24.9
1938	265.9	1972	20.4
1939	239.2	1973	20.2
1940	249.8	1974	15.9
1941	248.2	1975	19.1
1942	248.2	1976	17.8
1943	246.6	1977	15.2
1944	190.2	1978	16.6
1945	206.0	1979	17.0
1946	212.4	1980	12.6
1947	312.1	1981	12.3
1948	336.7	1982	10.4
1949	338.2		
1950	351.0		
1951	472.0		
1952	351.0		
1953	139.0		
1954	153.0		
1955	123.0		

programs were monitoring the progress of the therapy of about 4700 persons in the state.

All persons with significant tuberculin test reactions and no other evidence of disease are candidates for chemotherapeutic preventive treatment with isoniazid. If the age of the person is 35 years or more, the decision to advise preventive treatment requires at least one additional risk factor since the risk of INH-induced hepatitis is greater after this age. In 1981, 2148 persons finished their recommended courses of preventive treatment of the 3343 who started drugs.

Patients were excluded from preventive treatment follow-up for:

A diagnosis of tuberculosis	1
Death during the period	6
Moved and records referred	342
Discontinued drugs on medical advice (adverse reactions)	230

Incomplete preventive treatment occurred during the year due to:

Patient lost, unable to locate	48
Person stopped taking medicine, refused	507
Discontinued on medical advice for other than adverse reactions	61

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Pulmonary Tuberculosis: Control of Transmission

Bradley Gordon, M.D.

The infectious unit in tuberculosis, *Mycobacter* *tuberculosis*, is carried on airborne droplet nuclei. Th droplet nuclei are produced when persons w pulmonary tuberculosis sneeze, cough, speak or s The particles are so small (1 to 10μ) that air curre normally present in any room or corridor can keep th airborne. Once released from the host, they are concentrated nearby but become dispersed through the room.

Although patients with tuberculosis also shed lar particles containing numerous bacilli, these particles not operative in the airborne transmission of infection: organisms deposited on intact mucosa or s seldom invade tissue. When large particles contain many bacilli are inhaled, they impact on the wall of upper airway or trachea, where they are trapped in mucous blanket, carried to the oropharynx, a swallowed or expectorated. No infection resu because the bacilli have not penetrated the respirat system.

Techniques that reduce the number of droplet nuc in the room air are effective in preventing the airbor transmission of tuberculosis. Ventilation with fresh ai essential. Twenty or more room air changes an hour desirable. The number of viable tubercle bacilli reduced by ultraviolet irradiation of air in the upper p of the room. Effective antituberculosis chemothera reduces the number of bacilli in the air by reducing t number of organisms in the sputum and the freque of coughing. Covering the mouth and the nose w

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From: Bradley Gordon, M.D., Attending Physician, Department Internal Medicine, (Pulmonary Section), Scottsdale Memo Hospital, Scottsdale, Arizona 85251.

es while coughing or sneezing does, in the opinion ıany, reduce the number of organisms by reducing number of droplet nuclei put into the air.

asks are of limited value at best; if used, they should ıbricated to filter out droplet nuclei, and molded to ightly around the nose and the mouth. Methods e thought to be important in preventing the smission of tuberculosis, disposing of such personal ıs as clothes and bedding, sterilizing fomites, using gown, and gauze or paper masks, boiling dishes and ning walls, are ineffective and unnecessary.

ıe duration of a tuberculosis patient's infectiousness others after initiation of chemotherapy is important eciding either the length of hospitalization or the ıbility of home treatment without hospitalization. ore the diagnosis of tuberculosis is made and motherapy started, the hazard to others increases as gh and sputum increase. After chemotherapy is tuted, these processes are reversed and the hazard ıced.

a study in which tuberculosis patients were treated e living at home, repeated tuberculin testing of rculin negative household contacts indicated that roximately twenty percent were infected in the two ıths before the patient's chemotherapy was started, few, if any, were infected after treatment was started. e is, thus, no doubt that patients on effective apy lose their infectiousness for others rapidly. We consider, for an average sputum-positive patient, the hazard is minimal after one to two weeks of ctive treatment. If the patient is living at home when diagnosis is established, there is no routine need for pitalization since the household contact will already e been exposed for weeks or months to a hazard ter than that which exists after treatment is started.

uction of In-Hospital Transmission

ssuming that chemotherapy is started promptly n a presumptive diagnosis of tuberculosis is made, ain techniques reduce transmission from person to on. Covering the nose and mouth with tissues ng coughing or sneezing reduces the number of nized airborne secretions. During transportation ugh the halls, elevators, x-ray waiting areas, etc. the ent may be masked to accomplish the same result.

licroscopic examination of the sputum is one guide stimating or following infectiousness. When the smear is initially positive the patient is a "potential transmittor." When the smear bacillary count decreases progressively in weekly smears, the patient may be considered a "probable nontransmittor." With three consecutive negative smears, the patient is a "nontransmittor."

Hospital personnel or visitors who have had inadvertant exposure to a subsequently diagnosed smear-positive patient should be entered into a contact investigation. This will include tuberculin testing and chest x-rays at appropriate intervals. Report new cases to the Health Department for their assistance in contact investigation.

Other Measures

Masking of visitors or hospital personnel is probably helpful if in the patient's room for prolonged periods, or if the patient is unable to cooperate in "covering" his cough.

Handwashing and generally good housekeeping practice should be maintained.

No special precautions are needed for handling fomites (dishes, laundry, bedding, clothes, personal effects).

No special precautions are needed with extrapulmonary tuberculosis. Usual procedures for sanitary care of dressings and urine should be followed.

All patients admitted to the hospital whose symptoms include productive cough should be considered as possibly having tuberculosis. Such individuals should have a chest x-ray and further evaluations depending on course and results.

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Surgical Therapy of Pulmonary Tuberculosis—A Rare Necessity of the 1980's

An Historical Review

Dermont W. Melick, M.D.

In the 1930's and for some years thereafter collapse therapy for pulmonary tuberculosis was the recognized therapy. At that time eleven operations were recommended: 1) Phrenic paralysis; 2) Scalenotomy; 3) Pneumothorax; 4) Intrapleural pneumonolysis; 5) Oleothorax; 6) Multiple intercostal nerve paralyses; 7) Extrapleural pneumonolysis (to include extrapleural pneumothorax) 8) Supraperiosteal pneumonolysis; 9) Extrapleural thoracoplasty; 10) cavity drainage and 11) Pneumoperitoneum. The use of these procedures, either singly or in combination, plus strict sanatorium regimens resulted in a satisfactory rate of cure which was exhibited when patients treated with collapse therapy were compared against those individuals not so treated. Dr. John Alexander in his second text, *The Collapse Therapy of Pulmonary Tuberculosis*, was adamant that it was a much safer and better methodology than resectional surgery: "In view of the excellent clinical results that may be obtained from a combination of the sanatorium regimen and collapse therapy, the removal of a portion of the lung can no longer be seriously considered for early or limited lesions. The resection of a portion of a tuberculous lung is inevitably a hazardous operation, whereas the collapse therapy operations that are used for limited lesions are attended by very little danger."

However, there were those who disagreed with Alexander. One of the prime advocates of resecti surgery, Dr. Richard Overholt of Boston, Massachus was soon able to demonstrate from his results resectional surgery that Alexander was wrong in pronouncement, and many other thoracic surgeon the United States subsequently followed his lead. W the advent of the antituberculosis drugs safe resecti surgery became commonplace and collapse ther disappeared into the mists of yesteryear.

Drs. Fred Holmes, Victor Randolph, and Hov Randolph established the first medical office in Ariz dedicated to the specialty of pulmonary disease. In ti Dr. Holmes published his book entitled *The Treatm of Pulmonary Tuberculosis*. This was directed to b medical and surgical therapy.

Therapy was predominantly that of the applicatio the eleven collapse therapy methods listed earl Resectional surgery was soon introduced into armamentarium but collapse therapy encompas most of the patients treated at that time.

When Dr. Victor Randolph retired because of p health, Dr. Howell Randolph and I took on the duties the surgical endeavors. This included our work at Arizona State Sanatorium at Tempe. There were surgical facilities at the Sanatorium so operations w performed in various Phoenix hospitals, mainly at Go Samaritan Hospital where Mr. Guy Hanner, administrator, had set aside a small ward for tubercul surgical patients. Three-stage thoracoplasty was standard operation. Eventually there was recognize need for additional beds at the Arizona Tubercul Sanatorium. In 1949 the Arizona State Legislat appropriated seven hundred and fifty thousand doll for a new sanatorium. Governor Dan Garvey vetoed t bill. With this rebuff it was decided that a surgical u should be established at the sanatorium. Dr. J. P. Wa was then the Commissioner for Health for the State Arizona and he encouraged his tuberculosis cont officer, Dr. Gerald Clark, to see that the unit was put place. On August 13, 1949, the first operation lobectomy) was performed at that institution. This a subsequent operations resulted in a considerable savi to the sanatorium budget since the awkward method patient transfer between the sanatorium and loc hospitals was eliminated.

From: 1614 East Gardenia Avenue, North Phoenix, Arizona 85020.

rgery continued on a regular weekly schedule for a ber of years at the "old sanatorium" until the lature again passed an appropriation for a new torium, five million dollars this time, and Governor Fannin signed the bill. Dr. Austin Grant and I ted the surgical suite in the new sanatorium and inued operations once per week up until the ng of the sanatorium to tuberculosis patients in Unfortunately, all records have been lost but the ical results were eminently satisfactory and rding. The surgeons were beholden to the nursing of Mrs. Martha Harvey, Mrs. Olive Rechel, Mrs. ve Clark, Mrs. Huston and Mandy Olsen as well as agues, Roscoe Gutekunst, M.D., John McAdmas, ., and Richard Flynn, M.D. The excellence of the operative care was never equalled in any other ital in the Phoenix area to my personal knowledge.

Luke's Hospital was well known as a haven for those erners who chose bed rest and the hot, dry air of ona to cure their tuberculosis. Some prominent erners brought along well established reputations as ness men and following their cure became bulwarks e community as evidenced by their contributions to enix and its environs. Eventually it became necessary t. Luke's to consider the building of a new hospital funds were unusually difficult to obtain. Miss Jane r, then in the employ of the Arizona State Health artment, as infectious disease control officer, ght forward an application for federal funds rein it was emphasized that St. Luke's Hospital had many years concerned itself with tuberculosis rol in Arizona and therefore the request for funds his purpose was deemed a part of the effort to rol tuberculosis nationwide. The application by Rider was successful and from this effort appeared 'new" St. Luke's Hospital.

Luke's thereafter became the base for the tment of most of the private patients with rculosis. The medical and surgical staff members ld gather at noon on Thursdays to discuss mutual lems and to listen to the suggestions from eagues as to the consensus regarding optimum apy. The guiding medical personage at St. Luke's was Howell Randolph. He was medical director for years a member of the Board of Directors of St. Luke's pital. His dedication was exemplary and one that has ived deserved recognition in the annual Howell dolph Lecture held during the annual symposium nsored by St. Luke's Hospital.

ne introduction of streptomycin and subsequent gs decreased the necessity for surgery dramatically. ay resectional surgery for pulmonary tuberculosis is ost nonexistent with the exception of those cases ng to respond to adequate medical therapy, an asional case exhibiting "atypical" acid-fast bacilli and "burned out" cases of cavitary pulmonary erculosis at risk because of a secondary fungus der. The mycetoma with hemorrhage is an example.

Atypical Mycobacteria

Fred Yerger, M.D.

Historial

This year marks the 100th anniversary of the discovery of the tubercle bacillus by Dr. Koch. It was not long after that when acid-fast organisms other than *Mycobacteria tuberculosis* were described by other bacteriologists. In 1889, the avium bacillus, as a cause of disease in fowls, had been discovered. By 1898, the bovine tubercle bacillus was shown to be different from human types. By 1920, forty different varieties of acid-fast bacilli besides *Mycobacterium tuberculosis* had been noted. However, it was not until 1951 that a classification of the "atypical" mycobacteria was presented by Dr. E. H. Runyon,[3] a bacteriologist. His classification, which is shown in the following table, divided the "atypical" mycobacteria into four groups.

Group I: Photochromogens. These colonies have little or no pigment if grown in the dark, but when exposed to light for one hour become yellow-to-orange or brick red on reincubation.

Group II: Scotochromogens. These colonies have little or no pigment if grown in the dark, but when exposed to light for two weeks become yellow-to-orange or brick red.

From: Fred Yerger, M.D., Attending Physician, Department of Internal Medicine (Infectious Disease Section), Scottsdale Memorial Hospital, Scottsdale, Arizona 85251.

Group III: Nonphotochromogens. This group, also labeled as "Battey" bacillus, the name having been derived from the Battey State Hospital in Georgia, have little pigmentation though sometimes weak pigmentation is noted.

Group IV: Rapid Growers. The organisms tend to grow in five to seven days while the other three groups tend to take two or three weeks.

Besides color and growth rate, other characteristics are noted whereby these organisms can be separated. The most important test separating the atypical mycobacteria from *Mycobacterium tuberculosis* is the niacin test. All the "atypical" mycobacteria are niacin-negative with the exception of *Mycobacterium simiae*[14] which is niacin-positive. Other characteristics are the type of colonies such as smooth or rough, whether or not they have cord formation, catalase activity, drug resistance, and pathogenicity for animals. Since the original classification, other nontuberculous mycobacteria have been discovered with different characteristics making it difficult to rigidly group these organisms. Because of this, it is probably better to identify each mycobacteria by its own individual characteristics.

Epidemiology

At one point, it was thought that the atypical mycobacteria were simply a mutation of *Mycobacterium tuberculosis*. This, of course, was shown not to be the case. We know now that there is probably no human-to-human transmission as seen with *M. tuberculosis*. *Mycobacterium kansasii*, a photochromogen, which causes a pulmonary illness quite similar to *M. tuberculosis*, has been isolated from cattle, swine, and from water samples. *Mycobacter* *xenopi* has been found in water and also recovered f droppings from certain fowl. *Mycobacterium mari* can be recovered from both fresh and salt w Granulomas which occur on the skin, sometimes si to sporotrichosis, have been acquired by injur swimming pools and by cleaning aquari *Mycobacterium simiae* has been recovered f monkeys. Actually, one case of pulmonary dis occurred in a man with bronchogenic carcinoma had handled research monkeys. The organism has been recovered from tap water in a hospital in Tuc *Mycobacterium fortuitum* has been recovered f water and sawdust, and *Mycobacterium avi* *intracellulare* is found in soil, animals, and b Specifically how humans acquire these organisms is well understood. In most instances, the respiratory is probably the method of entrance.

Diagnosis

The usual presentation is pulmonary. However, s of the organisms can cause granulomas of the osteomyelitis, cervical lymphadenitis, genitouri disease, disseminated disease, and very ra meningitis. These organisms are common in environment and may be present as a saprophyte not as a cause of the illness itself. That, of co depends on the organism. *M. kansasii*, for instanc not a usual environmental organism. When it is foun the sputum of a person with pulmonary disease, str suspicion exists that it is the cause of the problem. the other hand, *Mycobacterium avium-intracellu* and *M. fortuitum* are very common saprophytes simply finding them in the sputum does not prove

Table 1
Runyon's Classification of Nontuberculous Mycobacteria

	Species	Pigmentation*	Colony Characteristics	Growth Rat
Group I Photochromogen	*M. kansasii* *M. marinum* *M. simiae*	None in dark; yellow to orange or brick-red with light	Usually smooth some rough, some cord formation	21-28 days
Group II Scotochromogen	*M. scrofulaceum* *M. szulgai*	Yellow to orange to dark red in light	Small and smooth—No cord	10-14 days
Group III Nonphotochromogens	*M. avium intracellulare* *M. xenopi* *M. terrae* *M. gastri* *M. triviale* *M. nonchromogen*	weak or none	small, smooth, no cord	21-28 days
Group IV Rapid growers	*M. fortuitum* *M. abscessus* *M. smegmatis* *M. flavescens* *M. phlei*	None	Rough or smooth	4-5 days

**See Text*

are the cause of the person's illness. The ideal way agnose infections due to atypical mycobacteria is to n tissue, as from lung biopsy. This is not always ble. Strong support exists when the organism is vered in large numbers from several cultures. Skin ng is not very helpful in contrast to its use with *obacterium tuberculosis* infections. What one often is a negative or doubtful reaction to 5-T.U./PPD and sitive reaction to 250 T.U./PPD antigens from three e strains that have been manufactured. These are ed as PPD-B from *Mycobacterium intracellulare*, G from *Mycobacterium scrofulaceum*, and PPD-Y *obacterium kansasii*. These skin tests might be ful in young children who have not as yet become tized to various antigen from other mycobacteria, re not very helpful in adults.

ce these infections most often are pulmonary, x- of the chest usually are abnormal. There are certain acteristics radiographically which might make one icious. Cavities are usually thin-walled and ration surrounding the cavities seems to be less e than in tuberculosis. Bronchogenic spread to the s or pleural effusion is not usually seen, and in ral the apical and anterior segments of the upper s are involved. Certainly the finding of an abnormal x-ray is quite important when these organisms are red from the sputum rather than simply finding bacteria in a person with normal chest x-ray.

ific Mycobacterial Illnesses:

kansasii. A typical patient with this infection is 40 to ars of age, a male, and usually white. One-third of patients give a history of having had a spontaneous mothorax in the past. Half of the people with *M. sii* infections have associated chronic lung disease as silicosis, COPD, or bronchiectasis. Many present no symptoms at all. Since these infections can be and indolent, some question arises as to whether ment is necessary. In one study involving 99 nts,[11] fourteen percent were not treated. Half of patients went on to show negative sputum, and had cavity closure. The other 43% had progressive se during the two years they were followed. *M. sii* is much more susceptible to antituberculin s than the other atypical mycobacteria though ving a little more resistance than *M. tuberculosis*. An llent combination is isoniazid at twice the usual , ethambutol and rifampin.[27] Treatment generally over 12 to 24 months and some people have to be ated. Kansasii infections are more common in the vest than in the Southeast. Infections have been frequent in California. Large numbers of patients come from Chicago, Houston, Dallas and New ans. Response to therapy is generally good. Those have the poorest prognosis have resistance to azid and have underlying lung disease. Surgery is ated as it would be in tuberculosis, i.e., to improve hanical function after removal of destroyed lung e. *M. kansasii*, besides causing pulmonary tions, can cause infection of the submandibular lymph nodes, can disseminate with hepatosplenomegaly and pancytopenia, and can infect kidneys and bone.

M. marinum is found in both fresh and salt water. The lesions usually start as a group of papules on the extremity finally forming ulceration. Sometimes lymphangitic spread occurs giving an appearance similar to sporotrichosis. As mentioned earlier, one sees this occurring after injuries in swimming pools, fishtanks, or with scratches or puncture wounds from fish or other material contaminated with salt water. *Mycobacterium marinum* does not produce lung disease. Regarding treatment of small lesions, electrodissection, surgical curettement or excision may be all that is necessary. For the deeper lesions, excellent results have been obtained by the use of tetracycline for four to 12 weeks[5] or the use of ethambutol and rifampin. If they do not respond to tetracycline, trimethoprim-sulfamethoxazole can be used.

M. simiae. This organism was first isolated from monkeys in 1969. The important feature is they are the only atypical bacteria that are niacin-positive and conceivably could be confused with *Mycobacterium tuberculosis*. Besides being isolated from monkeys, isolates were acquired from the tap water in a hospital in Tucson, Arizona. A few pulmonary cases have been reported. They involved an 88-year-old female in Los Angeles who died despite therapy with multiple drugs, and a patient with bronchogenic carcinoma of the lung who had been a monkey handler. In essence, there is very little experience with *M. simiae* infections. However, the organism seems to be quite resistant to antituberculosis drugs.

M. scrofulaceum. The term given for tuberculosis of the cervical lymph nodes was "scrofula" which was a very common disease of childhood before the turn of the century. Now, cases of scrofula secondary to atypical mycobacteria considerably outnumber those due to tuberculosis. Interestingly, it is a disease of children, rarely seen after the age of 12. The nodes that enlarge are usually under, or not far from the mandible, or unilateral. Usually the patient has no other symptoms. If these nodes are not removed they go on to rupture, form sinus tracts and drain. Besides *M. scrofulaceum, kansasii* and *avium-intracellulare* are causative organisms. The treatment is total excision; drugs are not necessary. Pulmonary disease has rarely been reported. Disseminated disease in adults has been reported, and associated with other serious disease. In Japan meningitis due to *M. scrofulaceum* has been noted.

M. szulgai.[25] This disease has occurred in middle-aged men. It is more susceptible to rifampin, ethionamide, ethambutol, and isoniazid than any of the other scotochromogens. Thirteen cases have been described in the literature up to 1976. All of these were pulmonary with the exception of an olecranon bursitis, and a cervical adenitis. The best treatment, according to Dr. Paul Davidson at the National Jewish Hospital in Denver, is a three-drug regimen of rifampin, isoniazid, and ethambutol. If a fourth drug is required, streptomycin, capreomycin or viomycin should be added. The organism is slightly more resistant than *M. tuberculosis.*

M. avium-intracellulare. These pathogens are commonly found in men with pre-existing chronic pulmonary disease with the peak incidence at the sixth decade. The course is usually chronic and indolent. Interestingly, a better prognosis is seen with those who have been previously treated for tuberculosis. As with kansasii the poor prognosis is associated with underlying diseases. Dr. Rosenzweig[13] reported on 100 consecutive cases of pulmonary infection due to this organism. In the medically treated cases a lasting conversion to negative was reached in 45% of the cases. Different combinations of drugs were used which were not based on in-vitro testing as the organisms were resistant to all drugs in-vitro. Treatment may not be necessary with this illness because the disease tends to remain stable and because combinations of drugs with a high potential for toxicity have to be used. Vigorous treatment should be performed with progressive pulmonary or disseminated disease. A typical regimen might include isoniazid, rifampin, ethambutol, ethionamide, cycloserine, and streptomycin. Probably the best results are obtained using a four-drug regimen and resectional surgery to remove cavities that have not closed if the disease is localized to one lobe or one lung. One method might be to treat for two years and at the point of maximal benefit, i.e. the sixth or eighth month, carry out appropriate resectional surgery. *M. avium-intracellulare*, besides producing a pulmonary disease, can also produce lymph node disease as seen with the scrofilaceum, but not as frequently. Cutaneous disease is rare as is involvement of bone unless secondary to dissemination. Interestingly, when disseminated disease occurs, it is seen in children instead of older people which is exactly the opposite from kansasii infections. With kansasii, leukopenia tends to occur whereas with *M. avium-intracellulare* the picture is that of leukocytosis with a leukemoid blood reaction.

M. szulgai. Thirteen cases had been reported by 1976. All had pulmonary infections except one with olecranon bursitis and one with cervical adenitis. Infections seem to be most common in middle-aged men. Radiographically it looks exactly like *M. tuberculosis.* Half of these tested had positive intermediate tuberculin skin tests. Treatment with chemotherapy seems to be good. The best drugs used were rifampin, isoniazid, and ethambutol. An important point is that this is one scotochromogen that does respond well to drugs in contrast to the others.

M. xenopi. This organism can be confused with *M. avium-intracellulare.* However, in contrast to that organism, it is much more drug sensitive.[24] This organism is isolated from a common source such as tap water. Consequently, one has to be certain as possible that he is dealing with an actual pathogen and not a saprophyte when found from human sources.

M. fortuitum. Most common infections due to *M. fortuitum* are soft tissue such as abscesses after trau This organism has been a causative agent contaminated heart valve prostheses, also cau osteomyelitis of the sternum following coronary ar bypass surgery. Pulmonary infections do occur but t are rare. Since the organism may normally be foun sputum, one may have a difficult time determin whether it simply represents a colonizer or an ac pathogen. Where pulmonary infections have occur they have been seen in people with pre-existing dise such as achalasia, emphysema, lipoid pneumonia, previous infections with tuberculosis. *M. fortui* infections can be quite chronic, lasting for ye Therapy should consist of debridement and drain when soft tissue or bone is infected. Doxycycline amikacin have been shown to be efficacious. Ot have suggested the use of several drugs such amikacin, ethionamide, and maybe ot antituberculosis drugs. As mentioned above, surg may be the most important factor in the treatment o *fortuitum* infections. If drugs are necessa susceptibility studies should be performed, and besi including the usual antituberculosis drugs, sho include the above mentioned antibiotics.

Table 2
Treatment

M. kansasii	Three drugs—INH, RMP, EMB
M. marinum	Three different regimens 1. RMP & EMB 2. Minocyclin 3. Trimethoprim—Sulfamethoxaz
M. simiae	Drug resistant
M. scrofulaceum	Treatment of choice is surgical r moval of diseased node for disse ated or pulmonary disease. Drug therapy not worked out. Probabl several drugs as in *M. avium-intracellulare.*
M. szulgai	*Three drugs* 1. RMP, EMB, ETA, or 2. INH, RMP, EMB
M. intracellulare	Drug resistant. If localized surgic excision, use 3-5 drugs: INH, RM EMB, and SM
M. fortuitum	Surgical debridement and drainag abscess—can use Amikacin an Doxycycline
M. xenopi	Three drugs—INH, RMP, SM

(INH) Isoniazid; (RMP) Rifampin; (SM) Streptomycin; (E Ethambutol; (PAS) Para-aminosalicylic acid; (CS) Cyclose (ETA) Ethionamide

Other atypical mycobacteria have been discovere *M. gordonae, M. terrae complex, M. gastri*, and *trivale.* At the present time, these are thought to saprophytes and not a cause of human disease. *ulcerans* does not occur in the United States. It is pres in the tropics and causes ulceration of the skin. *chelonei*, a rapid grower relatively similar to *fortuitum* has been a rare cause of pulmonary disea

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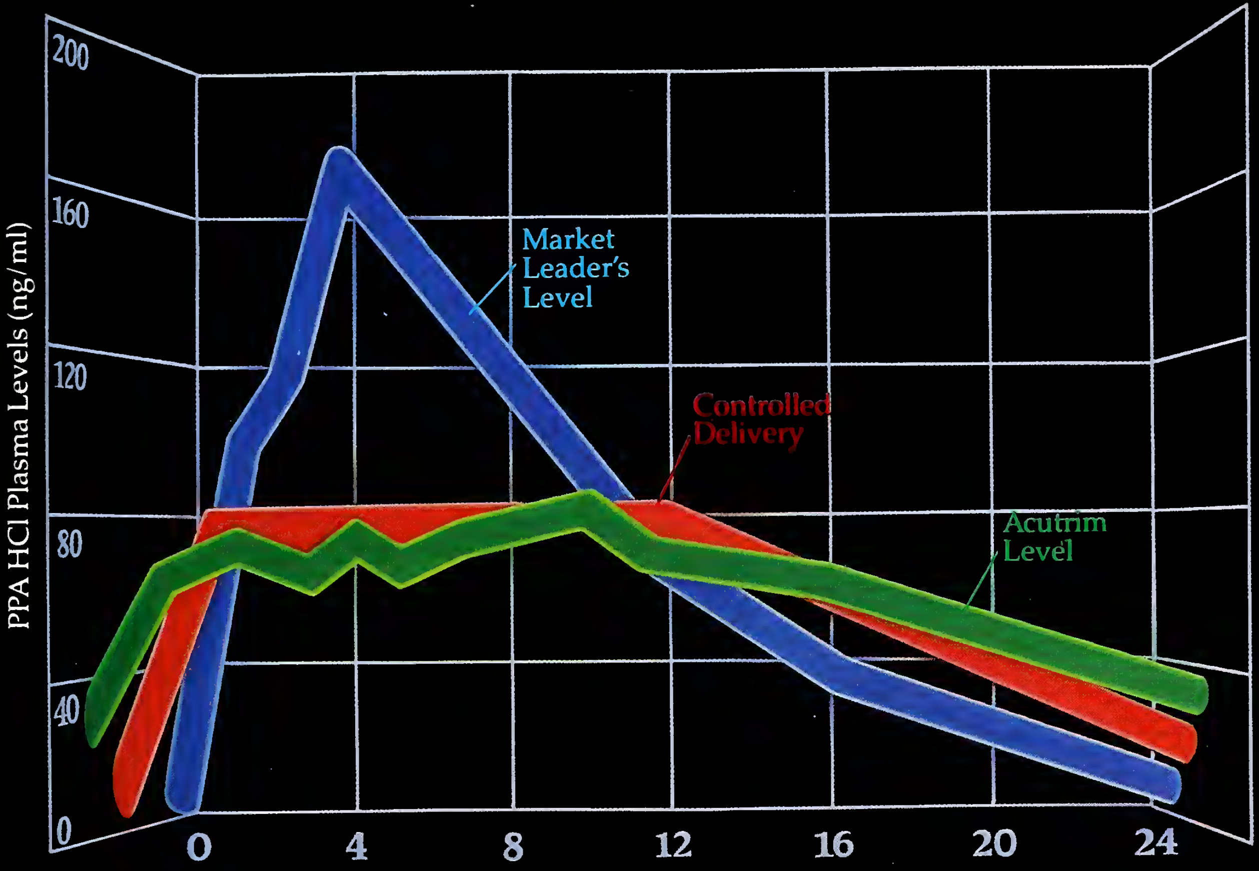

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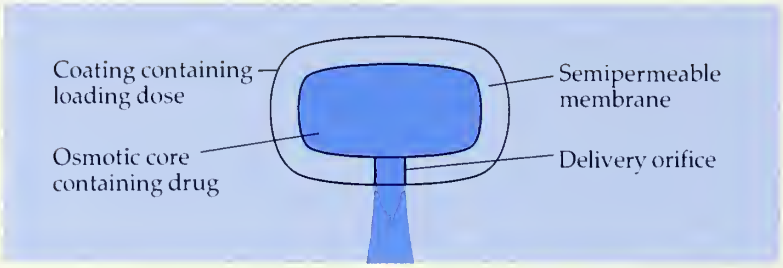

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Renal Tuberculosis

David Cherrill, M.D.

Despite newer and more effective therapy directed at *Mycobacterium tuberculosis*, the frequency of renal tuberculosis has not declined in recent decades. It is therefore imperative for clinicians to maintain a high index of suspicion when confronted with problems that are potentially compatible with the diagnosis of renal tuberculosis.

Blood borne dissemination of infection from a pulmonary focus accounts for the vast majority of cases of renal tuberculosis. It is rarely seen spreading to the retroperitoneal area from contiguous zones such as a tuberculous abscess of the spine. The organism first appears in the glomerulus and if healing occurs, organisms do not spill into the tubule. The renal involvement is bilateral but of these initial glomerular lesions, only four percent develop destructive tuberculosis. Renal parenchymal destruction occurs with the coalescence of caseating lesions which originate deep in the renal medulla at the loop of Henle. The lesions may progress to communicate with a calyx, then the renal pelvis, and beyond to involve the ureters and the bladder.

Symptoms attributed to tuberculous involvement of the kidneys are generally fever, flank pain and lower urinary tract symptoms such as dysuria, urgency and frequency. Gross hematuria may be present but microscopic hematuria and so-called "sterile pyuria" are often noted on urinalysis. The diagnosis is made by culturing *M. tuberculosis* in the urine. This is accomplished by culturing three to six first voided morning specimens. The straining of urine sediments for *M. tuberculosis* is a very low yield procedure and is not recommended.

There is often a long latent period between the initial pulmonary infection and the signs and symptoms of renal tuberculosis. An eight to ten year interval is not unusual and the renal lesion may be quite advanced by the time it is discovered. More than half of pati presenting with renal tuberculosis do no have evide of active tuberculosis elsewhere.

The roentgenogaphic appearance of re tuberculosis varies according to the severity of destructive process. Slight, single calyceal distortion partially calcified nonfunctioning kidney may observed with intravenous pyelography. In addit ureteral scarring and a shrunken distorted bladder often signs of more distal spread of infection.

The therapy of renal tuberculosis has evol considerably from rest therapy advocated prior successful surgical procedures and prior to the discov of streptomycin in 1943. When surgery was perfor prior to the introduction of chemotherapeutic agen was frought with significant postoperative morbi and mortality. In addition, surgery without p exposure to antituberculous drugs was often associa with postoperative tuberculous abscesses and a spr of the original infection.

Today medical treatment is appropriate for kidn that function well on intravenous pyeography desp small scars and cavities. The treatment is generall triple drug regimen consisting of isoniazid, ethambu and rifampin. This is administered for two years patients are advised to participate in a prolonged per of observation posttreatment. Surgical managemen thought by some to have a role in treating those patie with scarred, essentially nonfunctioning unilate kidneys. Triple drug therapy is administered fo minimum of six weeks prior to nephrectomy. Oth advocate a triple drug regimen, as outlined above, the management of tuberculous nonfunctioni kidneys. However, a strong argument may be made surgery when poor patient compliance leads to t potential development of resistant organisms.

Renal tuberculosis, although a bilateral disease at onset, often progresses to cause significant unilate destruction of tissue. Surgical and medical treatment both potentially effective and the selection of o therapy over the other should be determined on individual patient basis.

From: David Cherrill, M.D., Attending Physician, Department of Internal Medicine (Nephrology Section), Scottsdale Memorial Hospital, Scottsdale, Arizona 85251.

berculous Infections
the
ntral Nervous System

rge Goldberg, M.D.

he acid-fast bacillus occupies an important place in
5 infections because of its severity. Fortunately, the
dence of infection is decreasing. In terms of its
hology the tubercle bacillus can produce meningitis,
ial epidural granulomas, tuberculomas of the brain
spinal cord substance or any combination of these.

erculous Meningitis

he first description of TB meningitis is attributed to
Robert Whytt. Tuberculous meningitis is usually
sed by the human strain of the tubercle bacillus. It is
ariably associated with tuberculous infection
where in the body with the primary focus usually
nd in the chest. Tuberculous meningitis was formerly
most common type of bacterial meningitis except for
due to meningococcus. With the use of effective
hods of therapy the incidence due to this organism
been reduced, but meningitis still remains the most
ous complication and the most common cause of
th in tuberculous children. TB meningitis may occur
ny age. However, it is most common in childhood
ildren less than three years of age are most
ceptible) and early adult life. Approximately one-
d of the cases develop before the age of ten and over
6 occur before the age of forty. It is rare in infants
ow the age of three months. In infants the meningitis
usually associated with miliary tuberculosis.
proximately eight percent of all cases of clinical TB
complicated by meningitis. Both sexes are affected
ually. Atypical mycobacteria may be encountered
ely as a cause.

Pathogenesis

Experimentally exudative meningitis can not be produced by intravenous injection but can be produced by subarachnoid injection of tubercle bacilli. This is inconsistent with the idea that in man tuberculous meningitis is hematogenous in origin. It has been suggested that the meningitis develops from older, focal tuberculous lesions situated with brain or spinal cord tissue, in the meninges, or in the adjacent bone. These lesions arise during a period of bacillemia in the early stages of infection and usually become encapsulated as resistance is established. Later this encapsulated tissue weakens and with bacilli proliferation an infection of the meninges results. Often these tubercles are small and do not exceed several millimeters. Large tuberculomas of the brain are usually well encapsulated and seldom serve as a focus for meningitis. If the focus of infection is in bone adjacent to the CNS, this site is often the vertebrae or middle ear.

Pathology

Grossly the greatest involvement is at the base of the brain and about the spinal cord where a necrotic fibrinous exudate is seen compressing the underlying brain and cord and embraces the spinal and cranial nerves. Small white nodules are scattered over the lateral surfaces, particularly over the distribution of the middle cerebral arteries. A thick, white or cream-colored exudate may be seen extending from the region of the optic chiasm backward over the cerebellum and laterally over the sylvian fissure. There may be occlusion of the foramina of Magendie and Luschka and interference with the flow and absorption of the cerebrospinal fluid, thereby producing hydrocephalus. Large areas of caseation may be seen, and around blood vessels there may be small discrete tubercles noted. This histologic reaction is similar to that of TB elsewhere with focal caseation and surrounding epithelioid cells and lymphocytes. The familiar giant cell is usually sparse. As in other types of chronic meningeal infections, arteritis and phlebitis are common, sometimes associated with infection.

Clinical Features

The onset is usually subacute with headache, vomiting, fever, apathy and irritability as the most prominent symptoms. Occasionally the clinical manifestations of infection are minimal almost to the time of death. In infants and children convulsions, either generalized or focal, are likely to occur in the first few days of the disease. Mental changes (irritability, apathy, drowsiness and delerium) often appear. Kernig's and Brudzinski's signs can be present. Papilledema may be encountered as a late manifestion. Cranial nerve involvement occasionally is seen with facial paralysis and deafness. Pyramidal tract lesions are frequently noted with increased deep tendon reflexes and positive Babinski's sign. A low grade fever is appreciated. Eventually the patient becomes prostrate and comatose. A leukocytosis may accompany the infection but may not become pronounced until late in the disease,

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m: George Goldberg, M.D., Suite 202, 1728 West Glendale
nue, Phoenix, Arizona 85021.

(usually between 10,000-20,000/cu mm 70% to 80% polymorphonuclear cells).

Diagnosis

It may be difficult to make an early clinical diagnosis of TB meningitis. The diagnosis is facilitated if tuberculosis is appreciated on routine chest x-ray. In children, this test carries considerable weight in the diagnosis. TB meningitis was formerly almost always fatal with rare reports of spontaneous recoveries (most of them in older children and adults). The diagnosis of tuberculous meningitis can be established only by culturing the organisms from the cerebrospinal fluid. The usual findings in the CSF are slightly or moderately elevated pressure with clear, opalescent or occasionally cloudy fluid (rarely xanthochromic), a fibrin web which forms after the spinal fluid has been allowed to stand for a few hours, slight to moderate pleocytosis with a cell count usually below 500/cu mm, depression of CSF glucose to levels as low as ten mg percent, lowering of the CSF chloride values to 115 meq/liter, an increase in total protein to a value of several hundred milligrams per 100 ml and the presence of tubercle bacilli on smear by the Ziehl-Neelsen method. Tubercle bacilli can be cultured from CSF but approximately three weeks are required for growth.

Differential Diagnosis

Tuberculous meningitis must be differentiated from other forms of bacterial, viral and fungal infections. Acute bacterial meningitis is characterized by high CSF cell count and the presence of organisms in the cerebrospinal fluid. Treatment of purulent meningitis however may cause the spinal fluid findings to mimic those of tuberculous meningitis. The cerebrospinal fluid in syphilitic meningitis may show changes quite similar to those of TB. The normal glucose and positive serological reactions help establish the diagnosis however. The clinical picture and cerebrospinal fluid findings in cryptococcus or coccidiodal meningitis may be identical to those of tuberculous meningitis. The differential can be made with the findings of the budding yeast organisms in the unstained smear or on culture or again by serological testing. Meningeal involvement in viral infections as lymphocytic choriomeningitis, mumps or other forms of viral encephalitis may also produce a clinical picture very similar to that of tuberculous meningitis.

If a positive diagnosis of tuberculosis can not be made and evidence suggests TB as the most likely diagnosis, it is essential to treat such a patient with a full antituberculous regimen until proven otherwise.

Prognosis

Untreated TB meningitis carries a high fatality rate. For all practical purposes the disease should be considered 100% fatal with death in three to four weeks after onset. With the present use of antituberculous therapy this rate has been reduced to less than 20%. Relapses have been occasionally reported after a period of months or even years in apparently cured cases.

Sequelae

Some form of sequelae occurs in approximately of patients who recover. These range from a mir degree of facial weakness to severe intellectu physical impairment. Physical injuries include deaf seizures, blindness, hemiplegia, paralegia quadriplegia.

Treatment

Streptomycin was introduced in 1946. It was the useful agent against tuberculosis. Because of penetration into the CSF intrathecal therapy attempted. Apnea, convulsions and shock reported and therefore this route of administration discontinued. It is not absorbed from gastrointestinal tract and must be given parenter There were many recoveries reported but relapses common due to either the appearance of resis organisms or inadequate treatment. Ototoxicity is most frequent complication of streptomycin affec the vestibular apparatus.

Para-amino salicylic acid (PAS) was introduced ne a therapy for TB meningitis. The combinatio streptomycin and PAS significantly increased effectiveness of therapy. PAS, however, does penetrate well into the spinal fluid.

In 1952, isonicotinic hydrazide (isoniazid, INH) introduced. It has several advantages over the previ medications in that: 1) on a weight for weight basis the most potent TB agent; 2) it readily enters the CS it has a low degree of toxicity and 4) it may administered orally or intramuscularly. Complicati of its usage include the possibility of periph neuropathy which can be prevented by the d administration of pyridoxine. With the initiation isoniazid therapy the cure rate for TB meningitis alm doubled. Relapses were less common and complicati less frequent.

Because of resistant organisms, double or tri therapy was recommended by most authorities. included isoniazid, streptomycin and PAS. The us dosage of isoniazid for initiation of therapy i mg/kg/day for an adult and 10 to 20 mg/kg/day fo child. Pyridoxine in doses of 10 mg/100 mg of isoniazi also given. Streptomycin is given one intramuscularly daily for six to eight weeks and th twice a week. PAS was given in a total daily dosage o to 15 gm.

More recently ethambutol has been substituted PAS. Its dosage is 15 to 25 mg/kg/day and is relativ nontoxic. Retrobulbar neuritis can however be se with high doses. It is readily absorbed from gastrointestinal tract with peak serum concentrati occurring two hours after ingestion without reducti by concurrent digestion of food.

Rifampin was introduced in the 1960's and wh combined with isoiazid is a very effective treatment advanced pulmonary tuberculosis. Since it reac diffuses into the CSF in the presence of meningitis it cal addition for effective antituberculous motherapy. The usual dosage is 600 mg daily for lts and 15 mg/kg for children.

hionamide is also an effective drug which penetrates blood brain barrier and in cases of isoniazid stance this drug should be consistent. Hepatic age has been reported with the use of this drug.

ycloserine is another antituberculous drug with d penetration but has been reported to cause vulsions.

ne use of corticosteroids remains controversial and is ommended in patients with evidence of arachnoid blockage or diffuse cerebral edema. Some lies have indicated that giving steroids along with microbial drugs may reduce the mortality in TB ingitis. Whether steroids tend to increase the dence of severity of sequelae is not known.

t present, there remains controversy as to the most ropriate drug therapy in the treatment of erculous meningitis. Most of the clinical experience been with three drugs (isoniazed, rifampin, and ptomycin) with the INH and rifampin administered one, and possibly for two years. Double drug therapy H and rifampin alone), however, may be equally ctive. Pyrazinamide may be an attractive choice ause of its more rapid sterilization effect, while loserine and ethionamide have excellent etration into the CSF. Hopefully, future studies will resolve this controversy.

erculomas of the Brain and Spinal Cord

uberculous granulomas were previously a common n of intracranial tumor. The most common acranial site was the cerebellum. Intracranial erculomas are always hematogenous in origin. ratentorial tuberculomas usually cease to enlarge and may become calcified. These lesions may be visible on routine skull x-ray examination as irregular opaque shadows or as rounded or oval masses with a well defined outer shell. It is more common to find multiple rather than single intracerebral tuberculomas. A tuberculoma can often be separated almost cleanly from brain tissue at surgery. However, before the introduction of effective antituberculous therapy this was invariably followed by tuberculous meningitis in the case of cerebellar lesions and frequently after surgery of supratentorial lesions. Now this complication is uncommon.

Tuberculous infection may extend into the spinal cord from the dura in cases of Pott's disease. Isolated tuberculomas within the spinal cord are a rare cause of paraplegia.

Tuberculous Spinal Epidural Granuloma

Usually associated with tuberculosis of the vertebrae, tuberculous granulomas of the spinal epidural space occur mostly in the thoracic region. They may grow to a considerable size before clinical recognition and produce cord compression unless treated surgically.

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keletal Tuberculosis

bert R. Karpman, M.D.

he incidence of skeletal tuberculosis like many other ms of extrapulmonary tuberculosis has markedly creased over the past several years accounting for proximately one percent of cases each year.[1] It remains however the most common form of extrapulmonary tuberculosis followed by lymphatic and renal. Although management of the disease is no longer difficult since the advent of appropriate chemotherapy—the diagnosis of the disease remains elusive.

Pathogenesis

It is generally believed that skeletal tuberculosis results from dissemination of the tubercle bacillus through the blood stream early in the course of the infection. It may spread via lymphatic drainage from the pleura or kidney to other areas such as the vertebral bodies which represent the most common site.

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m: Arizona Orthopaedic Institute, Suite 116-B, 550 West Thomas ad, Phoenix, Arizona 85013.

Once the bacillus has spread, the joint space is initially involved, represented by a synovitis followed by precipitation of fibrin within the synovial fluid causing the so-called "rice bodies." The granulations then slowly erode the articular cartilage and subchondral bone starting at the periphery thereby preserving the weight bearing portion of the articular surface until late in the disease process. As the infection progresses "cold abscesses" may form around the joint leading to sinus tract formation. Ultimately the joint is replaced by a fibrous or bony ankylosis. The bones and joints most frequently involved other than the spine, include the weight bearing joints (hips, knees and ankles) and the small bones of the foot. Occasionally the ribs, shoulders and sternoclavicular joints may become involved.

Diagnosis

Although early diagnosis is essential in preservation of the joint, it is not infrequent that a definitive diagnosis is not made until three to six months following the onset of symptoms.[2] Patients often present with a vague history of joint or back pain. A history of pulmonary tuberculosis may or may not be present.

Clinical examination during this phase may only demonstrate mild tenderness around a joint with an effusion or tenderness over a spinous process in the back. During the destructive phase of the disease, obvious deformity is present occasionally with a draining sinus or fistula.

Radiographically, the first sign is soft tissue swelling around the involved joint, followed by demineralization with a ring of sclerosis in the subchondral bone and later destructive changes within the joint.

In the spine, disc space narrowing first occurs followed by erosion of the subchondral bone in the adjacent vertebral bodies ultimately causing complete collapse of the vertebral body with severe deformity and gibbus formation.[3]

The delay in radiographic changes will often separate tuberculosis from an acute bacterial infection; however, sarcoidosis, coccidioidomycosis, blastomycosis and other atypical mycobacteria may closely mimic the radiographic changes associated with tuberculosis.

The definitive diagnosis is made by microscopic examination and culture of the synovial fluid or tissue obtained from biopsy of the synovium or disc space. A
report of granulation tissue consistent with tuberc
is often sufficient to begin treatment.

Treatment

Once the diagnosis has been establis
chemotherapy should be initiated (two drugs
period of one and a half to two years) and ma
sufficient to treat the disease along with a peric
immobilization.[4] In later stages a synovectomy ma
required to remove the diseased granulation tissu

The spine deserves special mention. Although r
have reported good results with immobilization
chemotherapy alone,[5,6] anterior drainage of an ab
followed by fusion is recommended when neuro
signs are present such as progressive cord compress

In older cases where complete destruction of a we
bearing joint has occurred, total joint replacemen
been used to gain mobilization,[8] however, reactiva
of the disease has been reported following
procedure.[9,10]

In conclusion, musculoskeletal tuberculosis altho
rare tends to remain unrecognized long after sympt
have presented.

Once a definitive diagnosis has been m
appropriate chemotherpy can prevent the se
destructive changes that have occurred in the past

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dern Issues in the erapy of Tuberculosis

ert N. Hyland, M.D.

n has changed in our approach of tuberculosis in ast 35 years. Modern therapy has improved steadily, incidence of TB has declined, the era of the orium has ended and the noninfectiousness of nts on therapy has been confirmed.[10] Progress has such that TB is no longer the scourge and stigma it was in the past but a disease readily treated with tive therapy. Medical students and residents often little comprehension of the generations of medical surrounding tuberculosis. In 1900 TB was the ng cause of mortality in the United States with 200 ns per 100,000 population per year.[1] It is ironic that esent an uncomplicated case of tuberculosis is more y treated than disseminated coccidioidomycosis, sive histoplasmosis, cryptococcosis or any of the plicated chronic pneumonias in the compromised

veral in-depth reviews on tuberculosis and its ment have appeared recently.[2-5] Therefore, I have en to address the common problems faced by ern practitioners and discuss these specific issues in e detail.

ch Drugs Should be Used?

oniazid (INH) and rifampin (R) are the most potent s against *M. tuberculosis.*[3] In most patients with iously untreated disease, this combination will ct clinical improvement and micro-biological onse as rapidly as any known drug combination. The dence of primary INH resistance varies between and 15% in the United States.[11] The approach to tment of patients with an expected high incidence of nary drug resistance will be considered in detail sequently.

The most valuable additional drugs are streptomycin (SM) and pyrazinamide (PZA). Streptomycin is especially effective against rapidly multiplying, extracellular organisms[8] and therefore is considered to be especially valuable in cavitary disease. The well recognized potential for ototoxicity as well as its prompt mycobacteriocidal action make short duration of therapy desirable for this agent. A six to eight week period of daily or alternate day therapy is usually recommended. Pyrazinamide is most active against the slow-growing, intracellular population of organisms—the persisters responsible for relapse after therapy has been discontinued.[8] Additionally, PZA works best against organisms in an acid milieu, that which is encountered within the macrophage where the relatively metabolically inactive population exists.

Pyrazinamide was largely abandoned as a first-line drug several years ago due to reports of very high incidence of hepatotoxicity attributed to the medication. High dosage (60 mg/kg/day) and unappreciated hepatocellular damage from INH each account for a portion of the untoward reaction. However, dosage in the range of 30 to 35 mg/kg/day has been extremely well tolerated even with other potentially hepatotoxic drugs such as INH and rifampin included in the regimen in large treatment trials elsewhere in the world. There has been no difference in the incidence of adverse effects or in compliance between PZA-containing combinations and those without PZA.[7] Twice-per-week dosage of 50 to 60 mg/kg/dose is also well tolerated with comparable therapeutic outcome.

Ethambutol (EMB) is a bacteriostatic drug in contrast to all the former agents which are, to varying degrees, bacteriocidal. Although popular in this country for several years, more recent study has shown that it adds nothing to rifampin and INH in the treatment of disease caused by organisms sensitive to the latter two drugs.[3] Its relative therapeutic impotency requires that it be given for an extremely long period of time, 12 to 18 months. Optic atrophy was an important problem in early clinical trials with dosage as high as 25 to 40 mg/kg/day. This has been quite rare in the currently recommended 15 mg/kg/day dosage.

How long should therapy be given?

The landmark therapeutic trials conducted in the 1950's and 1960's by the Veterans Administration-Armed Forces Cooperative Group and the British Medical Research Council established that 18 to 24 months was necessary for cure and acceptably low risk of relapse with the drugs available at that time. The declining incidence of TB in the United States and England made comparably broad scale studies impossible as newer, more effective drugs appeared. Accordingly, the best later studies have been done in East Africa and Hong Kong and the noncomparability of the patients in these trials with the TB population in the United States contributed to the somewhat slow adoption of the lessons learned. However, it became clear that with

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: Robert N. Hyland, M.D., Suite 707, 5200 East Grant Road, on, Arizona 85712.

regimens including rifampin and INH, treatment duration could be shortened substantially.[4] Stead, Bates and Dutt[2,3] have applied these principles most intensively in this country and have established that clinical cure, microbiological sterilization, and low incidence of relapse could be achieved with nine months of INH and rifampin and have recommended this as standard therapy for first treatment of disease caused by sensitive organisms. Others have disputed this and criticized the data on which it is based[12] but the consensus seems in favor of the Arkansas approach.[28] It should be stressed, however, that if INH cannot be used due to patient intolerance or if resistant organisms are identified, alternative regimens probably should be given for 12 to 18 months.

What About Intermittant Therapy?

Administration of antituberculous medications two or three times per week was an approach explored during the same period as short-course therapy, often in the same trials.[7] The objectives of this approach were primarily economic in the Hong Kong and East African trials: What was the minimum duration and frequency of therapy where cost of drugs was a major concern. In the United States intermittent therapy was an approach stimulated by quite a different problem, namely, erratic self-administration of medication. Supervised, twice-per-week drug administration was shown to be cost-effective even when directed at the "manifestly unreliable" alcoholic population.[13]

Most intermittent dosage programs begin with a period of intensive regular daily therapy for six to eight weeks followed by a period of two to three doses per week to complete six to nine months of therapy. Using rifampin and INH alone, the Arkansas group has achieved a treatment failure rate of less than one percent with relapses after completion of therapy also less than one percent. They employ INH 15 mg/kg (usually 900 mg/dose) and rifampin 600 mg/dose each given together twice per week and have encountered a three percent incidence of drug-related side effects,[4] within the 1% to 4% range reported in most studies. A fairly consistent observation in both short-course and intermittent therapy programs is that, when relapses occur, they happen within the first six months after discontinuation of therapy and the mycobacterial isolates identified during relapse and *not* resistant to the original drugs used. Generally, the relapsed disease responds to retreatment with the same drugs for a somewhat longer period, three more months in the Arkansas protocol. The explanation for the relapse is thought to be failure to eradicate a portion of the metabolically inactive, intracellular population of organisms.[8]

Bates, Stead and Dutt have evolved a concept of "critical number of doses" of effective therapy. They hypothesize that 100 doses are required—twice weekly dosage for a total of nine months. The total cost of such therapy is less than $100 per patient.[3]

Can the Alcoholic Patient be Treated Safely with and Rifampin?

Fifty-eight percent of a 531 patient U. S. Public H Service Cooperative Trial population for short-co chemotherapy classified themselves as moderat excessive drinkers.[14] Although the heavy drinkers somewhat higher AST (SGOT) levels during therapy INH and rifampin, there was no greater incidenc progressive hepatotoxicity under treatment in group compared with the nonalcoholic population. work confirmed earlier studies in a smaller populatic Danish patients in which the alcoholic patients transiently higher serum SGOT and bilirubin levels were not predisposed either to a higher incidenc discontinuation of INH or rifampin or a higher incide of progressive liver damage than the nonalcoholic group.[15] Cross et al.[14] recommend that treatment monitoring of drug toxicity should be the sam alcoholics as in nonalcoholics.

Treatment of Tuberculosis during Pregnancy

Although there is controversy over whet pregnancy adversely affects the course of tuberculos there is no question that the pregnant woman with cannot safely have therapy postponed until deliv Two recent reviews have explored the question of safety of therapy to the fetus.[17,18] INH appears to unassociated with teratogenic risk and is associated neonatal seizures only when given to near-term wor in very high dosage. Even in such circumstar postpartum pyridoxine seems to prevent seizures in infant. Rifampin in doses 15 times higher than u clinically has induced neural tube and skel abnormalitites in rodents.[18] Statistical analysis of trea patients indicates an approximately five to seven f increased incidence of such abnormalities in offspring of pregnant women treated with rifampi but the numbers are not large enough to evolve pre figures.

Animal studies confirm that ethambutol is identifiable teratogen causing skeletal and o thalmologic damage. In humans, however, data sparse and inconclusive.[17] Streptomycin is best avoic because of significant ototoxic potential in the fe Teratogenic effects have not been documented. seems to be safe to the fetus but the relatively w antimycobacterial activity and the high incidence gastrointestinal intolerance make this an unattract drug.

The balance of efficacy and safety to mother and fe suggests that the standard INH and rifampin regime as appropriate in the pregnant patient as in population at large.

When Does the Patient Become Noninfectious?

There are considerable experimental, animal a clinical data to suggest that contagiousness declines v rapidly once treatment is begun.[9,10,29] This appears occur before smear or cultural negativity is achiev These observations provide part of the foundation

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move away from sanatorium treatment of TB and vards care in general hospitals for the initiation of rapy. A large portion of the rapid decline in ectiousness, while on therapy probably is due to the imated tenfold reduction in viable organisms during first two days of effective combined drug therapy. additional tenfold reduction is thought to occur over ensuing seven days.[26]

Often, because of the severity of disease, companying health problems, or social factors, the tient on newly initiated therapy is unable to return to home in the community. The physician must decide en the patient is sufficiently nonifectious to justify the continuation of respiratory isolation. Two weeks of mbination drug therapy is generally considered to be ficient to render the patient noninfectious. This is sed, in part, on observation by Yeager et al. in an rlier era of much less potent antituberculous drugs.[27] convincing clinical data have implicated a patient mpliant for an effective drug regimen as being a nsmitter of new disease to other humans. perimental studies disputing the noninfectiousness of tients on therapy have utilized intraperitoneal oculation of sputum into guinea pigs.[19]

es INH Acetylation Status have any Clinical levance?

How the genetic capability for rapid acetylation of H by the liver (common in Chinese, Eskimos and panese) affects therapeutic outcome and hepatic xicity has been debated for years and considered again ore recently.[20] The toxic metabolite mono- etylhydrazine (MAH) is formed considerably more pidly in rapid acetylators. It has been postulated that next metabolic step, to the diacetyl compound, is te-limiting and in the context of daily INH ministration, there is an accumulation of MAH.[21] owever, there is not persuasive evidence to support gher hepatotoxicity in treatment groups of rapid etylators compared with normal acetylators. Ellard et retrospectively analyzed a group of patients treated in ngapore and found no difference in the incidence of patic toxicity or treatment outcome as a function of etylation status.[21] There is a theoretical possibility that pid acetylators in programs of intermittent therapy ight tend to select out INH-resistant mycobacteria ecause of longer intervals of suboptimal ncentrations of active drug. There is no information to pport this hypothesis as a realistic clinical problem.

The accumulated evidence indicates that acetylation tus is not a major factor either in treatment outcome in toxicity. Neither daily nor intermittent treatment ograms have identified patient acetylator status as an portant issue.

ow Important is Primary Antituberculous Drug esistance?

The most recent figures (from 1978) from the Arizona epartment of Health Services suggest that drug sistance in our state is not more of a problem than sewhere.[29,30]

Table
Comparison of Percentages
of Resistance in Arizona Isolates (1978)
and those Reported by Hobby, et al. (1970)

	SM	INH	PAS	SM & INH	INH & PAS
Arizona Isolates	2.8	1.7	0.6	1.1	0.6
Hobby Isolates	1.3	1.5	3.6	0.36	0.62

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Primary drug resistance is reportedly high in recent immigrants from the Orient and among Mexican-born patients and the above figures might not reflect latest demographic trends. Byrd et al.[22] have emphasized the importance of not relying on a two-drug, INH containing regimen in immigrants from the Far East. They found a 58% incidence of INH resistance. Thirty-six percent of the isolates were resistant to streptomycin. On the other hand, resistance to rifampin or EMB occurred in only seven percent of the isolates. EMB and perhaps PZA should be added to the two standard drugs until sensitivities confirm that there is no drug resistance in that patient's mycobacterial isolate. In the event of confirmed INH resistance, rifampin would be continued and EMB added for another 12 months of therapy. Byrd et al.[22] confirmed excellent response to therapy using combinations of drugs to which the organisms were sensitive.

Moulding[23] has reviewed the evidence to support use of INH in the drug combination in patients with INH-resistant mycobacteria. He concludes that there is probably no value in adding INH in conventional 300 mg per day dosage. However, he speculates that in parts of the world with the combination of high-incidence INH resistance and limited budgets for expensive alternative drugs, a trial of higher dose INH might justify the anticipated increased risk of hepatotoxicity. However, this remains to be confirmed in clinical trials.

How Long Should the Treated Patient be Monitored in Follow-up?

As described earlier, most modern combination and intermittent therapy trials have shown that when relapse occurs, it happens early, usually within the first six months following discontinuation of therapy. Additionally, as a general rule, the organisms isolated from the patient in relapse show the same sensitivity pattern as the original isolate. This has led to the recommendation that beyond the completion of therapy, periodic x-ray and/or microbiological surveillance can be safely eliminated in most patients.

In circumstances where compliance with the treatment program has been poor or other factors predict a poor outcome of therapy, selective use of follow-up chest films or cultures might be warranted.[25]

Tuberculosis still occurs in the United States, less and less commonly but at the rate of 13/100,000 in the general population or 28,000 new cases per year with 2,800 deaths. It is an eminently treatable disease provided that an appropriate combination of drugs is started and the patient complies with the recommended treatment for the prescribed period. The progress since 1900 has been amazing but much work remains before we can consider this disease truly conquered.

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hemoprophylaxis of uberculosis

lark H. Gotfried, M.D.
ohn Bloom, M.D.
lichael D. Lebowitz, Ph.D.

ntroduction

Keywords: Chemoprophylaxis, Tuberculosis

When isoniazid (INH) was introduced in 1952, it had een demonstrated to be highly effective against *M. berculosis,* and was thought to be almost free of side ffects. Because INH was considered safe and effective, udies of its efficacy in preventive therapy of berculosis were undertaken. In 1955, Ferebee and almer investigated the use of INH in the prevention of n experimental tuberculous infection in guinea pigs.[1] hey concluded that a daily dose of 5 mg/kg of INH, tarted before a challenge infection and continued for en weeks after such challenge, prevented mortality for t least six months. When treated animals were echallenged after discontinuing INH, mortality was less n treated animals than in the control group.

This information resulted in 13 controlled trials of INH reventive therapy involving nearly 100,000 subjects in even countries. These studies demonstrated onclusively that INH preventive therapy results in an pproximately 70% average reduction in the incidence f tuberculous infection.[2] These various trials involved ousehold contacts, entire communities, people with nactive tuberculous lesions, institutionalized patients, nd skin test reactors with normal chest x-rays.

These studies also demonstrated that the preventive effect of INH lasts beyond the year of treatment. In 1979, Comstock et al., reported that the protective effect of INH lasted to some degree for nineteen years after its administration as a preventive drug.[3] Tuberculous case rates were significantly different in a group that was treated effectively in the first test program (5.5%), but inadequately in the second program (1.8%), when followed for a total of nineteen years.

These studies suggested that the effect of INH, rather than being bacteriostatic, causing temporary suppression of tubercle bacillary growth, is in reality bactericidal, enabling bodily defenses to control the infection. The majority of cases of tuberculosis today arise in individuals previously infected. The significant bactericidal effect of INH is demonstrated by its long term protective effect in infected but not actively diseased individuals. It appears that INH may prevent tuberculous infection as determined by a decreased rate of skin test conversion in initially negative reactors, when they were divided into treated and control groups.[2] The question whether INH can eradicate a tuberculin infection as judged by reversion of the skin test is still unanswered. It appears that INH may eradicate an infection that has been present for less than one year, but not those present for greater than that time period.[2]

The above studies leave little doubt that INH preventive therapy is highly effective in preventing tuberculous disease in previously infected individuals. Thus, the American Thoracic Society has published several guidelines concerning preventive therapy in tuberculous infections, most recently in 1974.[4]

Current ATC Recommendations

The current American Thoracic Society recommendations are summarized in Table 1.[5] Therapy is directed toward those at highest risk for developing active tuberculosis where the expected benefit outweighs the risk of therapy. Patients with a recent conversion (within two years) of tuberculin skin test (PPD) status from negative to positive have a relatively high risk (about 5% in the first year) of developing active disease and thus should be treated.

Although household contact and close associates of newly diagnosed patients are at high risk, an argument against treatment can be made if their PPD is negative, or if the index case does not appear highly infectious, or there is a definite high risk of adverse effects from INH. If chemoprophylaxis is withheld, repeat skin testing should be performed within three months to confirm persistent negativity. Children, however, due to their increased present and cumulative risk of developing active tuberculosis, along with their low incidence of adverse effects from INH, should receive preventive therapy for three months if their skin tests are initially negative. If repeat skin testing after three months demonstrates no conversion, therapy can be discontinued. When special clinical situations exist, such as immunosuppression, silicosis, or gastrectomy, preventive therapy should be directed toward cases with a positive PPD. The question of whether to treat all

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rom: University of Arizona College of Medicine. Division of espiratory Medicine, (Westend Laboratories), Tucson, Arizona 85724. eprint request to Michael D. Lebowitz, Ph.D., Professor of Internal ledicine, University of Arizona College of Medicine, Division of espiratory Medicine, Tucson, Arizona 85724.

tuberculin positive individuals less than 35 years of age is controversial and is discussed further.

Contraindications to preventive therapy includes acute liver disease and a previous complete course of INH. Relative contraindications include the use of alcohol or other drugs which may interact with INH (e.g., phenytoin), and pregnancy.

Adverse Effects of INH

During the initial trials, the incidence of side effects in INH preventive therapy appeared very low. However, in the 1970's, clusters of cases of clinical hepatitis appeared. In addition, a series of other adverse reactions including hypersensitivity reactions, neurologic symptoms, weight gain, edema, dyspnea and chest pain appeared also. The possibility that INH might be a carcinogen was raised as well.

After an unexpected outbreak of hepatitis during a trial of INH preventive therapy in Washington, the United States Public Health Service conducted a prospective trial to further elucidate the role of INH in inducing hepatic injury.[6] Nearly 14,000 patients in 21 cities, were entered in the trial in 1971-72. Cases of hepatitis were considered probable if SGOT was greater than 250 KU or if the elevation of SGPT was larger than SGOT in the absence of HB Ag. Cases were considered possible if other causes were possible or documentation was difficult. There were 92 probable cases and 82 possible cases. There was no sex or racial predilection for development of INH-induced hepatitis, but increasing age was a significant risk factor. No cases occurred in individuals under 20 years of age. The case rate was 0.3% in the 20 to 34 year age group, 1.2% in the 35 to 49 year age group, and 2.3% in those 50 to 64 years. Alcohol appeared to affect incidence rates, since non-drinkers had a 0.64% rate of hepatotoxicity, occasional drinkers, 1.08%, and daily users a 2.65% rate. The distribution of cases within the 12 month period showed that half the cases appeared in the first three months, one-fourt
the fourth through sixth months, 15% in months
through nine and the remaining 10% in the final th
months. However, in interpreting these data, it must
kept in mind that a significant number of people did
complete the year of therapy. Seven deaths w
reported in the probable group. Higher death rates h
been reported in other studies.[7]

Clinical and pathologic features of INH-induced li
disease are indistinguishable from those of v
hepatitis.[8] A small number of patients (10%) will pres
with a cholestatic picture. The cause of hepatic inj
induced by INH is poorly understood. The previou
accepted theory that rapid acetylator phenotype
associated with a higher risk of INH induced hepat
has not been supported by recent research data.[9] Ra
acetylators, however, may have a higher failure rat
patient noncompliance results in intermittent thera
Slow acetylators may have a higher risk of periphe
neuritis, since the parent drug appears to be responsi
for this complication.

Need for Biochemical Monitoring

The present ATS recommendations call only
clinical monitoring to determine possible INH toxici
implying that monitoring of liver enzymes is not use
in detecting individuals who will eventually go on
significant INH hepatotoxicity.[4] In 114 patients with IN
induced hepatotoxicity, Black and Mitchell found t
clinical observation was not effective in early selecti
of eventual cases of hepatitis.[7] Hepatitis caused
infections, ethanol, or other drugs is characterized
significant enzyme elevation antedating clinic
symptomatology.[10] Twenty percent of patients taki
INH will have elevations of serum transaminas
sometime during treatment. The majority of the
patients normalize their enzymes during treatment a
suffer no permanent sequelae. Byrd et al. followed o

Table 1
Preventive Therapy with Isoniazid[5]

Indications	Contraindications	Special Attention
Household members, other close associates of newly diagnosed patients, and newly infected persons	Progressive tuberculosis disease (more than one drug needed)	Concurrent use of other medications (possible drug interactions)
Positive tuberculin skin test reactors with abnormal chest roentgenogram	Adequate course of INH previously completed	Daily use of alcohol (possible higher incidence of INH-associated liver injury
Positive tuberculin skin test reactors with special clinical situations	Severe adverse reaction to INH previously	Current chronic liver disease (difficulty evaluating changes in hepatic function)
Other positive tuberculin skin test reactors up to age 35	Previous INH-associated hepatic injury Acute liver disease of any etiology	Pregnancy (prudent to defer until post-partum unless contact, new infection o other urgent indication)

Source: Farer L: *Am Rev Respir Dis (suppl.)* 1982;125:102.

usand patients given INH prophylaxis with monthly s and SGOT levels.[11] The drug was stopped if the el exceeded five times normal (current ATS ommendations allow three times normal elevation). enty-two percent of patients had elevations of ymes on at least one occasion. Almost 5% had levels ater than five times normal, and were asymptomatic. ly 1.7% had similar enzyme elevations with current symptoms. The previous study noted by chell and Black recorded a 12.3% fatality rate, most of om had liver enzyme elevation before the onset of ical symptoms. They also suggested that a fatal come of the disease is more likely if the hepatic injury ecognized after the patient has received INH for re than two months.[7] It appears that subclinical injury urs early in treatment and the process appears ersible if these reactions are detected early by tine enzyme determination.[12]

ventive Therapy for INH Resistant TB

he question of proper preventive therapy in INH stant TB has not been answered. The rate may be as n as 10% in certain populations.[13] With the influx of nigrants from areas where INH resistance occurs, the blem is becoming more prevalent in the United es. The current recommendations include either: 1) ne year course of INH; 2) a six to twelve month course ifampin alone or in combination with INH or another g; or 3) frequent medical exams and chest x-rays for years. Recently, the Center for Disease Control, ng decision analysis, determined that the third rnative was unsatisfactory because it would result in vo to seven fold increase of TB cases as compared to er of the drug regimens.[15] They felt that if the chance NH resistance is low, INH is the treatment of choice. ng rifampin in cases where the probability of stance increases may decrease the incidence of ve disease. An approach suggested by Glassroth[14] ludes INH for adults without evidence of additional factors for TB. It was recommended that children l adults with additional risk factors should receive mpin and a second drug for six to twelve months.

ration of Preventative Treatments

he optimal length of INH preventive therapy has en addressed in several studies. Therapy for more n one year offers no advantage over a 12 month ırse of INH.[16] Early studies in Greenland and Alaska gested that INH therapy for less than a year may be ective in preventing tuberculous infection. Recently bs and co-workers reported on five years of follow- of a study comparing INH prophylaxis with placebo 28,000 patients with fibrotic lesions on chest x-ray.[17] e study indicated that with lesions less than 2 cm.^{2}, six nths offered as much protection in preventing sequent reactivation as one year. In lesions greater in e, six months offered a 70% reduction, while 52 weeks ered 90% reduction. Thus, it appears in certain clinical ıations six months of prophylaxis may be effective. e shorter duration of therapy could theoretically luce INH related hepatitis by about 25%.

Table 2
Ratio of Tuberculosis Cases Preventable by Isoniazid to Hepatitis Cases Occurring During Isoniazid Treatment

		Age, Years				
Race	**Sex**	**25**	**35**	**45**	**5**	**65**
Tuberculosis/All Hepatitis						
W	M	4.9	2.0	1.0	0.5	0.3
W	F	4.0	1.7	1.0	0.5	0.4
B	M	5.3	1.8	0.9	0.5	0.3
B	F	5.1	2.0	1.0	0.5	0.4
Tuberculosis/Definite and Probable Hepatitis						
W	M	23.7	4.2	1.9	0.9	0.8
W	F	19.5	3.7	1.8	1.0	1.1
B	M	25.8	3.9	1.7	0.8	0.8
B	F	24.7	4.3	1.8	0.9	1.0

Definition of abbreviations:
W = white, B =Black, M = Male, F = Female

Source: Comstock GW: *Am Rev Respir Dis* 1975;111:573.

Risk/Benefit Controversies

Several concepts need to be kept in mind when considering risk/benefit analysis. Today, the overwhelming majority of new cases of active tuberculosis arise in those previously infected. The risk of reactivation disease is greatest within the first year after conversion (the initial infection) and without treatment the risk remains at some level throughout the lifetime of the individual. The cumulative risk to a young recent converter may be as high or higher than the initial risk associated with a new infection in an older person. The risk of INH-induced hepatitis increases with age and is rarely reported in people under 20. Tuberculosis is a treatable disease, but fulminant INH-induced hepatitis may not respond to cessation of the drug. Thus, when making a decision concerning chemoprophylaxis, an estimation of the risk of active TB compared to the chance of INH hepatotoxicity must be made for the individual patient. Other factors, including patient reliability, adequacy of medical follow-up, and public health considerations, also enter into the decision.

The demonstration of INH hepatotoxicity, which is sometimes fatal, has raised the question of the advisability of preventive therapy for some groups within the ATS guidelines. Comstock and Edwards looked at the risk of developing TB compared to the risk of hepatitis among major demographic subgroups.[18] They estimated the risk of development of tuberculous disease in infected individuals in the U. S. using data from studies in Muscogee County, Georgia, and Russell County, Alabama, along with those from three mental institutions, between 1950 and 1970. Combining the risk estimate with life expectancy tables, they calculated the lifetime risk for active tuberculosis in different age-groups. The risk of hepatitis in various age groups was determined from the USPHS study data. Assuming INH reduces case incidence by 70%, a table of TB cases prevented versus INH hepatitis was generated. (Table 2).

They argued that accepting a TB/hepatitis risk ratio of one would indicate that giving INH was safe under age 45. They stated that other risk factors (e.g., immunosuppression, abnormal chest x-ray, recent conversion, household contact) may argue for preventive therapy. It may not be valid to equate a case of tuberculosis, an understood and treatable disease, with a potentially more serious and untreatable case of hepatitis. On the other hand, tuberculosis can be highly infectious while hepatitis is not. However, the fact that in the USPHS studies a significant number of people did not take a full year of INH tends to underestimate hepatitis rates. The use of life tables in determining life time risk has also been criticized.

Recently, Taylor and others[19] performed a decision analysis to determine the benefits versus risks of preventive therapy for those aged 20 to 34. They concluded that not all of these patients with positive PPD and negative chest film should be treated. They calculated risk by averaging Muscogee County rates with rates from Denmark. They assumed that INH therapy will result in a 50% reduction in active cases, and that the risk of developing INH-induced hepatitis in this age group is 0.3% with 3.8% of these cases ending in death. They concluded using their best estimates for TB and hepatitis rates that the risk of death from INH related hepatitis in the 20 to 34 year-old age group was greater than that from TB.

Comstock in an editorial reply[20] criticized the inclusion of rates from Denmark in the average incidence of cases of tuberculosis as it underestimates the U. S. rate. Also, he disagreed with the assumption that tuberculosis rates will decline steadily over the entire period used in the analysis. Thirdly, he pointed out that the death rate from hepatitis in this age group, from pooled data including 10,000 people, has be
zero out of 100 cases. Finally, he argued that in decisi
analysis, where it is assumed that INH has to be taken
prevent TB, the rates of INH-induced hepatitis should
determined from patient compliance with the regim
As mentioned earlier, the rates used in the decisi
analysis came from the USPHS studies where there wa
significant degree of noncompliance. On the oth
hand, some data (i.e., Baltimore city) might ha
overestimated case fatality rates due to the presence
some form of liver disease mortality epidemic there
that time.[21]

Part of the problem in determining risk versus bene
is due to the lack of adequate data on tubercu
reaction rates, conversions, and associated ca
incidence rates in the past two decades. Furthermore,
M. tuberculosis infections decrease, the rate of cro
reactivity of PPD with atypical Mycobacteria increas
In almost all cases, no therapy is needed with infecti
and conversion due to atypicals, especially in childre

One must seriously consider the factors whi
increase risks of contact, pathogenicity after infecti
(the risk of clinical disease), contagious spread, a
reactivation. Those who are of lower socioeconom
status certainly have these greater risks. The increas
risk of conversion followed by an active primary case (
reactivation) is thought to be more likely in t
alcoholic, as well as the diabetic or otherwi
immunosuppressed. Therefore, preventive therapy is
greater concern in these higher risk groups.

The effect of this controversy on practicing physicia
in Maryland has been reported by Dash and c
workers.[22] The report was based on an analysis
patients placed on preventive therapy in 15 Marylan
counties between 1973 and 1976, the peric

Table 3
Summary Estimates of the Likelihood of Events from the Decision Tree[19]

Event	Node on Decision Tree	Best Estimate of Benefits and Risks	Sensitivity Analysis I: High Benefit , Low Risk for Preventive Treatment	Sensitivity Analysis I Low Benefit, High Ri for Preventive Treatment
Tuberculosis, if no preventive teatment is given	2	0.0094*	0.0130†	0.0056‡
Death from tuberculosis	3,8,9	0.023	0.036	0.010
Isoniazid-related hepatitis	4	0.003	0.003	0.0011
Death from isoniazid-related hepatitis	5	0.038	0.000	0.046
Tuberculosis if preventive treatment with isoniazid is given	6,7	0.0047§	0.0039‖	0.00392£

* (47/100.000 cases) x 20 years
† (65/100.000 cases) x 20 years
‡ (28/100.000 cases) x 20 years
§ 0.0094 x (1.0 - 0.5) = best estimate of effectiveness
‖ 0.0130 x (10.0 - 0.7) = high estimate of effectiveness
£ 0.0056 x (1.0 - 0.3) = low estimate of effectiveness

Source: Taylor WC, et al: *Ann Int Med* 1981;94:808.

nediately following the initial reports of INH hepatitis ths. During this period, the number of patients ced on preventive therapy increased yearly. hough there was no significant change in the race or composition or in proportion of contacts treated, the an age of treated patients decreased over the period.

nmary

Vith the decline of new cases of tuberculosis, and the t that the majority of these cases arise in those eviously infected, the question of who should receive eventive therapy is still not completely clear. The fact t INH has significant and at times fatal side effects kes it unclear whether the ultimate danger to the ient is the disease or its treatment. It seems that ople at especially high risk, including those with normal chest x-rays and positive PPDs and close ntacts at high risk (as outlined earlier) should be ated for six to twelve months with preventive therapy pending on their risk for developing INH induced patitis.

dolescents and children with positive skin tests can treated with preventive therapy due to their low risk adverse effects from INH. Factors mentioned earlier ould be of concern when deciding to treat a patient der 35 with a positive skin test of unknown duration. ysician and patient should make an informed atment decision based on the implications of and atment needed for an active case of tuberculosis lay, and the relative risk of INH-induced hepatic ury. Individual risk/benefit decisions must be made fore recommending blanket prophylaxis for certain oups.

Vith the recent success of intermittent and short term emotherapeutic regimens,[23] the entire question of emoprophylaxis needs to be reexamined. Current lmonology might even suggest using SGOT's easured monthly during the first four months, as this pears to provide 90% efficacy (Sbarbaro, 1982, rsonal communication). New studies are needed that l indicate present rates of conversion, tuberculin activity, and incidence of disease, and that will detail t only the most effective regimen of preventive erapy, but toward whom it should be directed.

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Editorials

Medical Staffs versus Hospitals

Theoretical Fears are Realities

As voiced many times in this column over the past several years, the competition for patients in each community will increase dramatically with the rapid advance of multiple prepaid health care plans, the development of IPA's, and in the future, preferred provider organizations (PPO's) Furthermore, the intrusion into the marketplace by hospitals with their development of ambulatory care centers both near and distant to their hospitals, will no doubt add to this problem. In communities who have defined geographical borders, the pressure for patients is already being felt.

One such medical staff has decided to make a determined effort to limit the scope of the hospital's intrusion into the delivery of health care. This medical staff, always known as being somewhat of a maverick, has taken an aggressive stance against certain hospital policies. These include, partially withdrawing support from the family practice residency training program which they feel has been expanded beyond the scope of need for their community. Furthermore, they are concerned that the costs of running such a program are being added to hospital costs resulting in increased expenses for their patients, and further fueling increases in health care premiums. Also, they have taken a stance against the hospital's "outreach programs." These programs include patient education and treatment of various disorders such as obesity, smoking, hypertension, and physical fitness. Full-time people have been hired by the hospital to run these programs which are apparently self-supporting. In addition, the opening of a primary care center in an outlying area of the community, previously not served by medical offices, has resulted in may patients being treated by the hospital's full-time physicians who man this substation. The support for such a facility has diminished greatly with the advent of medical office buildings being built within the same geographical area as this outlying clinic and the development of a hospital in this same location. The medical sta come out strongly against the continuation of this clinic. Similar objections to hospital's free standir outpatient clinics have been voicec other hospital staffs and the hospit have been responsive to this dema by closing such facilities.

Thus, medical staffs can exert pressure to decrease hospital competition for patients rather tha back and idly talk. Physicians must within their medical staff's structur begin to take an active role in dire hospital growth. They must also recognize the hospital's need to generate revenue to support its facilities, but hopefully, if both wor concert, the objectives of both gro can be accommodated without an adversarial position being develope Careful planning can avoid some o repercussions that are now taking p within certain hospital medical staff

It appears to this writer, that unle we begin to exert collective action, diminished control over health planning that we now have, will be forever lost.

Marshall Block, M.D.
Editor

Medical Education in Biochemistry

A general biochemistry course wh is required of all first-year medical students is frequently remembered mixed emotions by practicing physicians. The difficulties in teachi this course are now magnified by th current unprecedented expansion o basic knowledge in biochemistry. Further complicating the problem, r students enter medical school with experience in biochemistry ranging from none to advanced work includ Ph.D. degrees. Twenty percent of th 1982 entering class has completed tv semesters of biochemistry. In the future, this percentage will be highe Currently there are 170 undergradu biochemistry majors at the Universit Arizona, many of whom are premed students.

The Department of Biochemistry a the University of Arizona in 1981 developed a new approach to biochemistry education for the med school. In the past, the introductory course was frequently taught at a pa which was too rapid for beginners a too slow for advanced students. The first year course is now divided into two tracks. Track one (introductory biochemistry) is designed for beginn medical students who have little or r prior training in biochemistry. Track (intermediate biochemistry) has n established for those students can demonstrate an adequate kground in biochemistry.

tablishing two independent courses rs several important advantages. beginning students can take a eral survey course at a pace which otimized for their benefit. They no ger compete with students having a ificant background in biochemistry. intermediate course can assume a c background, and emphasize areas articular scientific or medical vance.

ne new course covers three areas of chemistry including metabolic ulation and nutrition, gene ression and recombinant DNA nology, and the cell membrane. dents have fewer lectures, but are n more time for reading the ntific literature. Considerably more e is available for discussions. An rt is made to relate separate areas iochemistry by a common theme. example, lectures on blood include noglobin structure and function, e structure, genetic cloning niques, the regulation of gene ression in development, and the lication of cloning techniques to ical problems such as detection and tment of the Thallasemias. Another ure of the course is that individual dents present twenty minute inars. The students are divided into ups which organize colloquia in as including: the ethics of cloning in dicine, in-born errors of metabolism, mechanism of action of steroid mones, and the roles of minerals in ly function. This part of the course ps to develop self-education skills in nce, and the ability to communicate others. The latter will be an portant part of a later successful ical practice.

he track two course has now been ght to the classes of 1985 and 1986. experience has been very positive faculty and students alike. The ulty teach a smaller group of erested students, the topics are given in-depth coverage, and students n a much greater understanding of application of science to problems clinical medicine. It may be that this gram can serve as a model for her coordination between medical and medical school ricula.

liam J. Grimes, Ph.D.
sociate Professor
partment of Biochemistry

rc E. Tischler, Ph.D.
sistant Professor
partment of Biochemistry

uis J. Kettel, M.D.
an, College of Medicine

"Doctors Don't Know" and "Other Doctors Don't Know"

I'm sure you have shared my experience, when having a few lay friends in for a dinner party, of having conversation quickly move to an attack of the medical profession, even though such discussion might be insensitive to the feelings of the host. Confrontations such as: "Doctors don't know anything about diet; Doctors don't know how to listen to patients; Doctors don't know anything about wellness; Doctors don't have sensitivity to patients' problems; Doctors don't know anything about drugs and are insensitive to problems of poly-pharmacy; Doctors don't know how to talk to patients; Doctor don't know how to treat the whole patient; Doctors don't know anything about arthritis; Doctors don't know anything about prevention of disease; Doctors don't know anything about alcoholism; Doctors don't know anything about aging and geriatrics; Doctors don't know how to let people die;" and so on and on into the evening. Entertainment is guest perpetuated by hearsay anecdotal examples of physicians' stupidity and ignorance. Each dissertation in this little "doctors don't know game" becomes more vehement and spirited than the last.

To be defensive in order to protect one's own ego would be a self-service that I would not be inclined to justify. However, when tarnishing of the medical profession's creditability increases the influence of cultists and health quacks who threaten our opportunity to produce the highest level of health care, we have the obligation of defending our image.

To attempt to counteract the statements that we know are false we could give examples of experts in our own community that are the best authorities in each topic listed above. We also could defend the position that all physicians, because of the selection process and curriculum of medical schools, have superior knowledge of general health subjects including fields other than their own specialty. However, such arguments accomplish little as they are viewed as self-serving bias.

Defense of the physician's image, against false lay perceptions and against innuendo by quasi-health authorities motivated by the desire for a piece of the health care turf, may not be necessary as long as physicians don't destroy their own creditability by joining in on a variation of that little game: "Other Doctors Don't Know."

How often have you heard your own peers boost their individual egos or specialty interest by saying in the presence of laity: "Other doctors don't know;" "Other doctors don't know how to distinguish between depression and Alzheimer's disease; Other doctors don't know how to take an arthritis history; Other doctors don't know how to listen to patients and are not as sensitive to their needs as I am; Other doctors don't know how to curb their greed and, therefore, do unnecessary surgery and other procedures; Other doctors don't know much if they are not in the ivory tower of a medical school or prestigious institution; Other doctors don't know how to integrate into the world of free enterprise and are so intellectually and skill deficient that they have to stay under the umbrella of the institution; Other doctors who are not limited specialists cover such a broad field that they don't know much about any disease; Other doctors who limit their practice to a narrow specialty don't know anything about the whole patients;" and on and on.

Unjust lay criticism can be defensed effectively by a public relations program that focuses on the health care accomplishments of the medical profession and provides valid health education for our patients. However, the "cheap shots" that we take of one another to try to boost our own personal egos cannot be defensed. There is no way to convince the laity that you are not ignorant and are not insensitive to patients' needs if your own colleagues insist that you are. The biggest threat to the image of physicians is not lay criticism or even the washing of our own linen in public but the frequently thoughtless ego-boosting, game: "Other Doctors Don't Know."

Our good image and credibility, essential to our effecting the best influence on health-related decisions by our society, can best be accomplished if we consciously avoid being destructive of one another.

Robert M. Anderson, M.D.
Associate Dean
University of Arizona
College of Medicine
Tucson, Arizona 85724

Conflicts in Medicine

Initial Visit • • •

"Doctor, money is no object, find out what is wrong with me."

One Month Later • • •

"Doctor, can't you accept assignment?"

Medical History

Historical Correction and Locations

John W. Kennedy, M.D.

The Equestrian Statue in Prescott

The redoubtable Dermot W. Melick, M.D. writes—and doesn't he always:

"Re: Leonard Wood, *Arizona Medicine* , September 1982. Your macula must be blurring the incoming messages," he continues, "1) Gutson Borglum 1867-1941" (He corrects the spelling of the last name). "2) Gutson had a brother, Solon Hannibal Borglum 18 1922. He, not old Gutsy, sculpted Bucky O'Neal." (true Arizonan would call this Rough Rider equestr statue which standeth in the courthouse yard in Presc anything but the Bucky O'Neal Statue) so be it.

Not only my macula is blurring, but methinks cerebral cortex is receding from my clavarium!

St. Luke's in the Pines

In another instance we asked for assistance in locati the site of "St Luke's in Prescott." In the twenties a thirties St. Luke's Home of Phoenix, as it was then call and St. Luke's of Tucson were tuberculosis sanitor These desert sanitoria sent their patients to Presc during the summer months.

So we betook ourselves, with Dr. Bertram Snyder long time pulmonary specialist in Phoenix, and escalat ourselves to mile-high Prescott, where we consult with the premiere medical historian of fair Prescott, D Florence Yount.

Deponeth Dr. Yount, "the location of St. Luk Sanatorium is in the five hundred block of Park Avenu (Figure 1.) It is now privately owned and the form patient wards as well as the chapel are now priva dwellings.

From: 705 East Tuckey Lane, Phoenix, Arizona 85014

pel — St. Luke's in the Woods, Prescott, Arizona.
v a private dwelling.

Left to right:
Doctors Florence Yount, Ned Yount and Bertram Snyder — at the gravesite of Doctor W. D. Cotton.

further bit of Prescott medical history is noted by Dr.
nt as she continues. "The health officer, whose grave
visited, (Figure 2) was W. D. Cotton, M.D. He came
n Colorado in 1894. He also brought some fancy
ses, harness type, and as I remember, from the news
ounts he built a barn on his property, which he had
uired, before he built a house." He is reported by
ebbeman, *Medicine in Territorial Arizona*, to have
n dealing with some cases of diphtheria in 1895 and
ebbeman implied that this was the cause of death.
the *Journal-Miner* reported the cause of death as
noid fever; he died October 28, 1895 at age 43. (A
rt term as Health Officer, probably less than a year).

Dr. Yount continued, "Dr. Ned Yount was appointed City Health Officer in 1949, succeeding his father who had suffered a stroke and served as City-County Health Officer until 1973. I had no official capacity in the Health Department but did run a Well Baby Clinic several years. Burt Snyder, M.D. served the Yavapai County Health Department as consultant for tuberculosis and held clinics once a month in Prescott."

We look forward to more medical history by Dr. Florence Yount on the Prescott scene. At the turn of the century the movers and shakers of Territorial Arizona medicine were, in the main, practitioners of Prescott.

Briefly Noted

oseph A. Ceimo, M.D., Glendale,
recently elected to Fellowship in
American Academy of Pediatrics.

ck A. Friedland, M.D., Phoenix,
red in the highest award in the
ond annual Visual Improvement
gram sponsored by the City of
enix. Dr. Friedland's recently
ovated office was cited as
tributing to the visual enhancement
Phoenix.

ohn R. Green, M.D., Phoenix,
ector of the Barrow Neurological
itute and chairman of the Division
Neurological Surgery, was a featured
aker at a recent ceremony
nouncing a $1-million endowment
the chair of neurological surgery in
Barrow Neurological Institute.

Christopher T. Maloney, M.D.
1983 President
Pima County Medical Society

Oliver Harper, M.D., Peoria, has been elected to the board of directors of Boswell Memorial Hospital.

Merlin W. Kamper, M.D., Phoenix, has been appointed Vice President for Medical Affairs of St. Luke's Hospital and St. Luke's Behavioral Health Services.

Christopher T. Maloney, M.D., Tucson, took office January 11 as President of the Pima County Medical Society. Dr. Maloney, active in community and medical groups, serves as a Southern District Director of the Arizona Medical Association. **William N. Neubauer, M.D.,** has been named as president elect of the society. **Ronald P. Spark, M.D.,** is the vice president and **Gary L. Henderson, M.D.,** is the new secretary-treasurer.

Jerome C. Rothbaum, M.D., Tucson, is a newly elected member of the board of trustees of Tucson Medical Center.

Ronald Sandler, M.D., Mesa, was profiled recently in the Arizona Republic for his work as a volunteer surgeon with the Phoenix-based nonprofit Esperanca, Inc. International Health Project. Dr. Sandler and his wife, Janis, an attorney and former nurse, spent three-weeks as Esperanca volunteers in Brazil in August 1981.

Richard D. Zonis, M.D., Scottsdale, has been elected president of the medical staff of Scottsdale Memorial Hospital for 1983. Dr. Zonis also serves as a director of the Arizona Medical Association and Delegate to the AMA. He was recently appointed to the State Board of Medical Examiners. **Richard J. Bailey, M.D.,** Scottsdale, was named president-elect.

The Arizona Medical Association welcomes the following new members:

Cochise

Eduardo N. Brown, M.D.
Internal Medicine
P. O. Box 4096, Bisbee
La Universidad Autonoma de
Guadalajara, Mexico—1974

Donna M. Fulton, M.D.
Internal Medicine
1951 South Frontage Road, Sierra Vista
Michigan State University—1979

Maricopa

Paul L. Amerding, M.D.
General Surgery
1402 North Miller Road, Scottsdale
Albany Medical College—1973

James Earl Cessna, M.D.
Plastic Surgery
10565 North Tatum Boulevard, Scottsdale
University of Kansas—1973

Hardarshan Chawla, M.D.
Pathology
1120 West Watkins, Phoenix
Government Medical College, India
1963

Thomas G. Daniel, M.D.
General and Thoracic Surgery
13460 North 94th Drive, Peoria
University of Oklahoma—1958

Genuina T. Dizon-Retiro, M.D.
Anesthesiology
P. O. Box 25649, Tempe
University of the Philippines—1956

John W. Fitzgerald, M.D.
Cardiology
222 West Thomas Road, Phoenix
Stanford University School of Medicine
1971

Richard Houck, M.D.
Obstetrics/Gynecology
6036 North Nineteenth Avenue, Phoenix
Hahnemann Medical College—1976

Gerald S. Johnson, M.D.
General Surgery
10575 North Tatum Boulevard, Scottsdale
Temple University—1974

Robert Mazet, M.D.
Anesthesiology
6556 South La Rosa, Tempe
University of California, Los Angeles
1975

Cedric W. McClinton, M.D.
Family Practice
12251 North 32nd Street, Paradise Valley
Jefferson Medical College—1974

Joseph G. Morgan, M.D.
Obstetrics/Gynecology
4616 East Shea Boulevard, Phoenix
Wayne State University—1978

Arcot Premkumer, M.D.
Internal Medicine
2910 North Third Street, Phoenix
Bangalore College, India—1969

Marc J. Rosen, M.D.
Orthopedic Surgery
2525 West Greenway Road, Phoenix
University of Cincinnati—1976

Kurt Ruht, M.D.
Internal Medicine
7555 East Osborn Road, Scottsdale
Temple University—1976

Mark L. Shwer, M.D.
Neonatology
Good Samaritan Hospital
University of Cape Town, South Africa
1970

Larry Spratling, M.D.
Internal Medicine and
Pulmonary Disease
525 North Eighteenth Street, Phoenix
Tulane University—1972

Robert Sterret, M.D.
Diagnostic Radiology
1111 East McDowell Road, Phoer
University of Illinois—1972

Timothy E. Walker, M.D.
General Surgery
500 West Tenth Place, Mesa
University of Nebraska—1975

Thomas Wilson, M.D.
Obstetrics/Gynecology
4232 East Cactus Road, Paradise Va
Duke University—1964

Lee S. Yosowitz, M.D.
Obstetrics/Gynecology
2720 North 20th Street, Phoenix
Indiana University—1977

Mohave

Henry M. Snell, M.D.
Pathology
Lake Havasu Regional Hospital
Lake Havasu City
Medical College of Virginia—195

The faculty for CURRENT PERSPECTIVES IV: NEWER IMAGING TECHNIQUES, left to right, Mr. W. C. Doran, Picker International, Drs. Tin B. Hunter and Mark M. Chernin of the U. of A. College of Medicine, and M. Herbert Nathan, Program Chairman.

Dr. V. A. Dunham signs in for CURRENT PERSPECTIVES IV.

Pinal
Dativa Catalan, M.D.
Internal Medicine
P. O. Box 96, Casa Grande
illa Central University, Philippines
1960
Marylu Macabuhay, M.D.
Pediatrics
P. O. Box 96, Casa Grande
ersity of Santo Tomas, Philippines
1969

New Resident Members
Jennifer Nichols, M.D.
Family Practice
od Samaritan Hospital, Phoenix
Jniversity of Oklahoma—1981
Kim E. Scott, M.D.
Internal Medicine
od Samaritan Hospital, Phoenix
Jniversity of Nebraska—1979

New Student Member
Bart J. Carter
University of Arizona
College of Medicine

William E. Crisp, M.D., Phoenix, discussed BIOFEEDBACK at the December HEALTH TALK public education program co-sponsored by the Arizona Medical Association and Blue Cross/Blue Shield of Arizona.

stering for CURRENT PERSPECTIVES IV: Charles A. Dalton, M.D.

Arizona
Medicine

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Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education

- Arizona Chapter, American Cancer Society
- Arizona Medical Association
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- Arizona Thoracic Society/Arizona Lung Association
- Walter O Boswell Memorial Hospital, Sun City
- Camelback Hospital, Phoenix
- Desert Samaritan Hospital, Mesa
- The Eye Foundation
- Flagstaff Hospital & Medical Center of Northern Arizona
- Good Samaritan Medical Center, Phoenix
- Health Maintenance Associates, Phoenix
- Maricopa Medical Center, Phoenix
- Memorial Hospital of Phoenix
- Mesa Lutheran Hospital, Mesa
- Phoenix Baptist Hospital & Health Center
- Phoenix Indian Medical Center
- St Joseph's Hospital & Medical Center, Phoenix
- St Luke's Hospital & Medical Center, Phoenix
- St Mary's Hospital, Tucson
- Scottsdale Memorial Hospital
- Tucson Hospitals Medical Education Program, (THMEP) Tucson
- University of Arizona College of Medicine, Tucson
- Veterans Administration Medical Center, Phoenix
- Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award

MARCH

Current Perspectives VI: Newer Aspects of VD
March 16. ArMA Offices, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 West Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmembers $20). Approved for 3½ hours of Category 1 credit.

4th Annual Sports Medicine Symposium
March 17-19 Arizona Health Sciences Center, Tucson, Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for hour per hour Category 1 credit.

Ninth Annual Maricopa Medical Center Urological Seminar
March 19-20. The Alamos Resort, Scottsdale. Sponsor: Maricopa Medical Center. Contact: Department of Surgery, Section of Urology, Maricopa Medical Center, 2601 East Roosevelt, Phoenix, Arizona 85008. Approved for 14 hours of Category 1 credit.

Ski & Study Seminar
March 19-26. Banff Springs Hotel, Banff, Alberta, Canada. Sponsor: Desert Samaritan Hospital & Health Center. Contact. CME Office, Desert Samaritan Hospital & Health Center, 1400 South Dobson Road, Mesa, Arizona 85202. Approved for 20 hours of Category 1 credit.

Medical and Surgical Management of the Inflamed Eye
March 24-26. Grand Canyon, Arizona. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, University of Arizona Health Sciences Center, Tucson, AZ 85724 Approved for 15½ hours of Category 1 credit.

Arizona Chest Symposium
March 24-26. Doubletree Hotel, Tucson. Sponsor: U. of A. Health Sciences Center. Contact. Sandy Younker, R.N., Chest and Allergy Clinic, Tucson Medical Center, P.O. Box 42195, Tucson, AZ 85733. Approved for hour per hour Category 1 credit.

Dermatology
March 26. Arizona Health Sciences Center. Sponsor. U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724 Approved for hour per hour Category 1 credit.

Dean's Clinical Rounds
March 30. Arizona Health Sciences Center, Tucson. Sponsor U. of A. College of Medicine. Contact Office of Continuing Medical Education, U. of A Health Sciences Center, Tucson, AZ 85724 Approved for hour per hour Category 1 credit.

APRIL

9th Annual Sports Medicine Symposium
April 8-10. Holiday Inn MetroCenter, Phoenix. Sponsor: Arizona Medical Association. Contact. Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, AZ 85013.

Renal and Genitourinary Problems
April 16. Ramada Safari Resort, Scottsdale. Sponsor: University of Arizona College of Medicine. Contact Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724 Approved for 8 hours of Category 1 credit

Advanced Cardiac Life Support Recertification/Provider
April 19-21. Phoenix. Sponsor: ACLS, Affiliate American Heart Assn. and Ar Contact. Beverly Richter, Arizona Cha American College of Emergency Physicians, 810 W. Bethany Home Ro Phoenix, AZ 85013. Provider course approved for 21 hours of Category 1 and Recertification approved for 13 h

Update Primary Care
April 9-22. Arizona Health Sciences C Tucson. Sponsor: University of Arizon Health Sciences Center. Contact. Offi Continuing Medical Education, U. of Health Sciences Center, Tucson, AZ 8 Approved for hour per hour Category credit.

MAY

Obesity and Nutrition
May 14 University of Arizona Health Sciences Center. Sponsor: University Arizona College of Medicine. Contact. Office of Continuing Medical Educatic of A. Health Sciences Center, Tucson, 85724 Approved for 8 hours of Catego credit.

Current Perspective VII: Drug and Alc Abuse
May 19. Doubletree Hotel, Tucson. Sponsor: Arizona Medical Association. Contact. Nikki Mertz, ArMA, 810 W. Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmem $20). Approved for 3½ hours of Catego credit.

Advanced Life Support Recertification/Provider)
May 18-20 ArMA Offices, Phoenix. Sponsor: ACLS, Az Affiliate American Heart Assn. and ArMA. Contact: Bever Richter, Arizona Chapter, American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, A. 85013. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

SUMMER CME CRUISE/CONFERENCES ON LEGAL-MEDICAL ISSUES

Alaskan, Caribbean Mediterranean Ten and fourteen days in July and August. Approved for 24 CME Category 1 credits (AMA/PRA). Distinguished professors. Fly round trip FREE on Caribbean and Alaskan cruises. Excellent group fa on finest ships. Registration limitec Scheduled prior to 12/31/80—Tax deductible under 1976 Tax Reform Act. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

SIXTH ANNUAL
ARIZONA PATIENT/HEALTH EDUCATION CONFERENCE AND ARIZONA PUBLIC HEALTH ASSOCIATION SPRING MEETING
May 19 and 20, 1983
Scottsdale, Arizona

ME
: Containment Options for the 80's.
ention, Education and Technology

more information, contact Donna
men, Arizona Department of Health
ices, 1740 West Adams, Phoenix,
ona 85007, 602-255-1008.

MONTHLY OR WEEKLY

ne Medics Meeting
ond Tuesday of each month, Humana
pital Phoenix, 5:45 p.m. J. South
sroom. Sponsor: Shrine Medics.
tact: Robert C. Briggs, M.D., 5121 N.
tral Ave., Phoenix, AZ 85012.

atric Grand Rounds
sday 7:30-8:30 a.m in Phoenix:
Tues.—Phoenix Indian Hospital,
Tues.— Maricopa County Hospital,
Tues.—Good Samaritan Hospital,
Tues.—St. Joseph's Hospital.
nsor: Maricopa Medical Center
oenix Hospital's Affiliated Pediatric
gram). Contact: J. Kipp Charlton, M.D.,
E. Roosevelt, Phoenix, AZ 85008.
roved for 1 hour per session Category
edit.

ew of Forensic Pathology
ent Case, Special Topics
rsday, weekly, 11 a.m., 120 S. 6th Ave.,
enix, AZ. Sponsor: Arizona Society of
ologists. Contact: H.H. Karnitschnig,
, 120 S. 6th Ave., Phoenix, AZ.
roved for 1 hour per session Category
edit.

ARIZONA HEART INSTITUTE

) N. 22nd St., Phoenix, P.O. Box 10,000,
enix, AZ 85064. Contact: Ravi Koopot,
.

ical Conference
diovascular Medicine
d Tues., 5:15 p.m., second floor
sroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff

Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.

Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.

Surgical Department CME
4th Friday, 7 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact. Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 86016 Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

MAKE GOOD HEALTH A HABIT
SHAPE UP FOR LIFE

The early
years...
the middle
years...
the later
years...

it's never too soon or too late
to practice good health habits.
Exercise regularly, eat right,
manage stress, don't smoke,
use alcohol only in moderation,
get adequate sleep.

You can bet your life that total fitness
— physical and mental —
pays off.
To find out how you can
make good health a habit
and Shape Up for Life,
write for free pamphlets from
the AMA Auxiliary,
535 N. Dearborn St.,
Chicago, IL 60610.

BRIEF SUMMARY
PROCARDIA® CAPSULES
(nifedipine)
For Oral Use

INDICATIONS AND USAGE: I. Vasospastic Angina: PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation, 2) angina or coronary artery spasm provoked by ergonovine, or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm, or when angina is refractory to nitrates and/or adequate doses of beta blockers

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings.)

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA

WARNINGS: Excessive Hypotension: Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out

Increased Angina: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure: Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS: General: Hypotension: Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

Drug interactions: Beta-adrenergic blocking agents: (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina

Long-acting nitrates. PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Digitalis: Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis, mutagenesis, impairment of fertility. When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy. Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication. Additionally, the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

Laboratory Tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature

HOW SUPPLIED: Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container.

More detailed professional information available on request

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Pfizer **LABORATORIES DIVISION**
PFIZER INC

"I can do things that I couldn't do for 3 yrs. including joining the human race again."

Quotes from an unsolicited letter received by Pfizer from an angina patient. While this patient's experience is representative of many unsolicited comments received, not all patients will respond to Procardia nor will they all respond to the same degree.

© 1983, Pfizer Inc.

"My daily routine consisted of sitting in my chair trying to stay alive."

"My doctor switched me to PROCARDIA[*] *as soon as it became available. The change in my condition is remarkable."*

"I shop, cook and can plant flowers again."

"I have been able to do volunteer work...and feel needed and useful once again."

PROCARDIA can mean the return to a more normal life for your patients—having fewer anginal attacks, taking fewer nitroglycerin tablets, doing more, and being more productive once again.

Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).

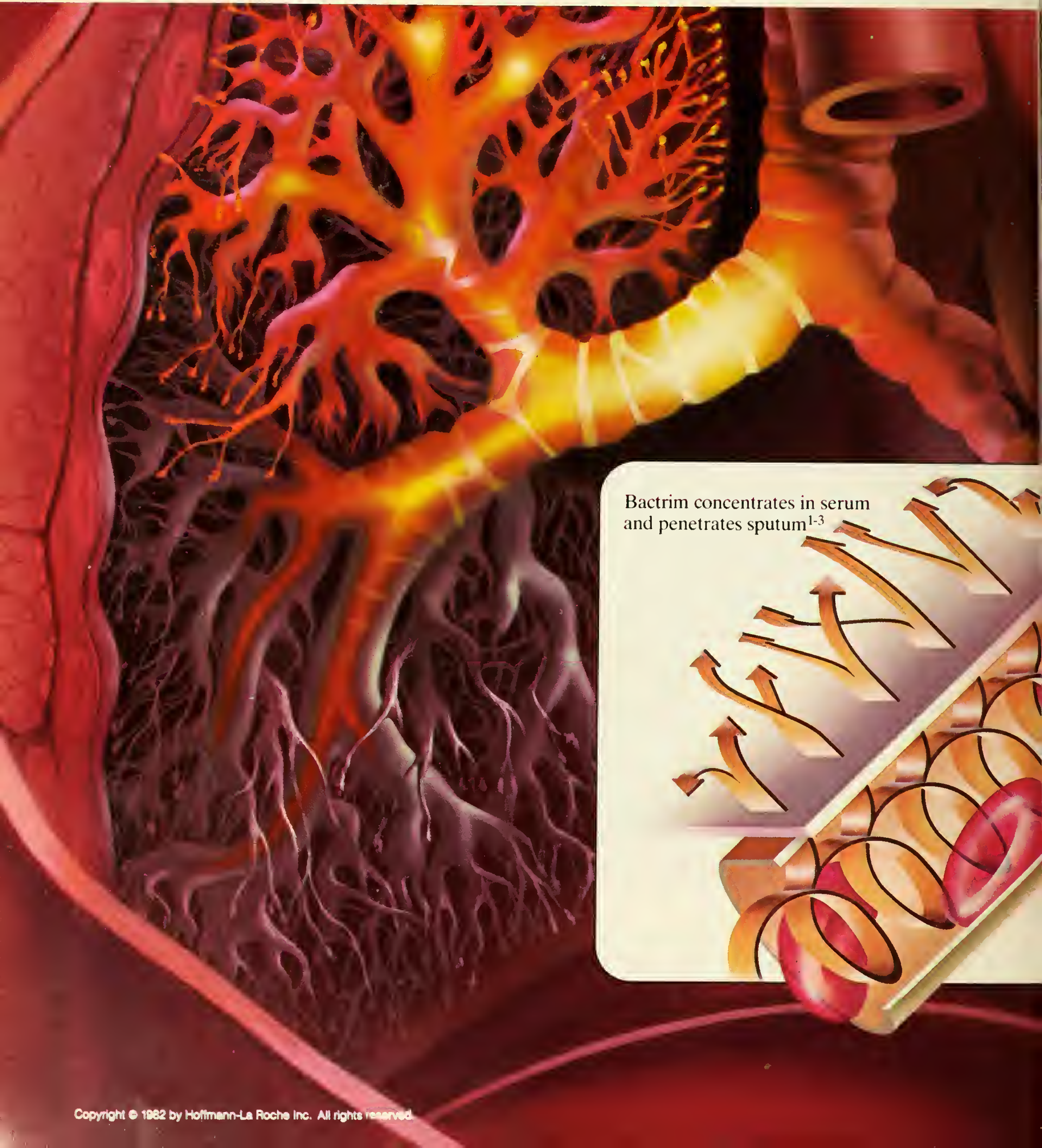
for the varied faces of angina

Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
2) Angina where the clinical presentation suggests a possible vasospastic component.
3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

PROCARDIA®
(NIFEDIPINE) *Capsules 10 mg*

Please see PROCARDIA *brief summary on adjoining page.*

Bactrim™ attacks th
(trimethoprim and sulfamethoxazole/Roche)
# in acute exacerbation



Bactrim concentrates in serum and penetrates sputum[1-3]

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ROCHE®

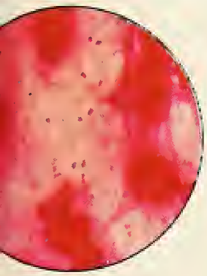
ajor pathogens
f chronic bronchitis*

Bactrim clears sputum of susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.[4,5] One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.[5]

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.[6]

H. influenzae—even
illin-resistant strains



ks *S. pneumoniae*

Bactrim reduces coughing and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.[7-9] Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

Bactrim also proved more effective than tetracyclines in 10 clinical trials involving nearly 700 patients.[10] Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: 1. Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother 1/2*:1105-1106, 1971. **2.** Jordan GW *et al: Can Med Assoc J 112*:91S-95S, Jun 14, 1975. **3.** Beck H, Pechere JC: *Prog Antimicrob Anticancer Chemother 1*:663-667, 1969. **4.** Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts;* Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. **5.** Schreiner A *et al: Infection 6*(2):54-56, 1978. **6.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **7.** Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts. Op. cit.*, pp. 15-16. **8.** Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. **9.** Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. **10.** Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

Economical
b.i.d.

Bactrim™ DS
(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

*Due to susceptible organisms. **Please see next page for summary of product information.**

Bactrim™

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides, patients with documented megaloblastic anemia due to folate deficiency, pregnancy at term, nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus, infants less than 2 months of age

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders Frequent CBC's are recommended, therapy should be discontinued if a significantly reduced count of any formed blood element is noted

Precautions: *General* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients

Pregnancy Teratogenic Effects Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia *Allergic reactions* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis *Gastrointestinal reactions* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis *CNS reactions* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness *Miscellaneous reactions* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L E phenomenon Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients, cross-sensitivity with these agents may exist In rats, long-term therapy with sulfonamides has produced thyroid malignancies

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp (20 ml) b i d for 10-14 days Use identical daily dosage for 5 days for shigellosis

Children Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days Use identical daily dosage for 5 days for shigellosis

For patients with renal impairment Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS

Usual adult dosage. 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp (20 ml) b i d for 14 days

PNEUMOCYSTIS CARINII PNEUMONITIS

Recommended dosage 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days See complete product information for suggested children's dosage table

Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100, Tel-E-Dose® packages of 100, Prescription Paks of 20 and 28 *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500, Tel-E-Dose® packages of 100, Prescription Paks of 40 *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml), cherry flavored—bottles of 100 ml and 16 oz (1 pint) *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml), fruit-licorice flavored—bottles of 16 oz (1 pint)

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The TRUTH about Rheumatism and Arthritis: Hype vs. Hope

a pragmatic assessment of diagnostic and treatment techniques presented for the general public, family and general practitioners, and internists.

Saturday, March 26, 1983
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The distinguished faculty will include: WILBUR J. BLECHMAN, MD, FACP, Clinical Professor of Medicine, University of Miami (Fla) Medical School • ROBERT L. SWEZEY, MD, FACP, Medical Director of the Arthritis and Back Pain Center, Santa Monica, California • GERALD WEISSMANN, MD, President, American Rheumatism Association, and Professor of Medicine, and Director, Division of Rheumatology, Department of Medicine, New York University Medical Center, New York City.

Seminar Chairman: Sanford H. Roth, M.D.
Chairman, Arthritis Program, St. Luke's Medical Center

The $15 registration fee ($10 for senior citizens) for the half-day session includes the cost of seminar materials and refreshments.

Co-sponsored by the David C. H. Sun, M.D. Memorial Institute, St. Luke's Medical Center, Phoenix, and Scottsdale Memorial Hospital.

For additional information, contact: Christine Campbell, Medical Meeting Planner
St. Luke's Medical Center
525 N. 18th Street, Phoenix, Arizona 85006
(602) 251-8402

AMA PRESENTS

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Members: $156 **Resident Members:** $108 **Nonmembers: $204** **Resident Nonmembers:** $132
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GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F

Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m., Amphitheater

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Education Bldg. West.

KINO COMMUNITY HOSPITAL, (THMEP)

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact R. Fischer, M.D.

Medical Conference
Weekly, 12:30 p.m., Contact Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact. Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m., Santa Cruz Room, Contact. George Wallace, M.D.

Medicine Conference
Daily 12-1 p.m., Contact: S. Schaffner, M.D.

Chest Surgery Conference
Weekly, Mondays, 1:30 p.m., Santa Cruz Room.

Hematology Conference
2nd Tuesday, 1:00 p.m., Contact Walt Koppenbrink, M.D.

OB/GYN Dept. Grand Rounds
Weekly, Tuesday, 12 Noon, Santa Cruz Room.

Obstetrical Problem Conference
Weekly, Tuesday, 7:30 a.m., Yavapai Rm.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 a.m., Contact Robert Ganelin, M.D.

Urology Discharge Planning Conference
Weekly, Tuesday, 11:30 a.m., Station 42.

Hand Surgery Conference
Weekly, Wednesday, 7:30 a.m., Santa Cruz Room.

Neurosurgery Discharge Planning
Weekly, Wednesday, 1:30 p.m., Station 42.

OB/Neonatology Seminar
Weekly, Wednesday, 7:30 a.m., Yavapai Rm.

Clinical Psychiatric Conference
Weekly, Wednesday, 11-12 p.m., Mental Health Annex, Rm. 1346

Surgery Conference
Weekly, Wednesday, 7-8 a.m., Surgical Dept.

Current Concepts in Medicine & Surgery
1st Thursday, 1 p.m., Dr. Hospital Class Rm., Contact Dr. Tamsky

Cardiology Conference
Weekly, Thursday, 2 p.m., Santa Cruz Room.

OB/GYN Resident Conference
Weekly,Thursday, 12 p.m., Yavapai Rm.

GYN Endocrine Seminar
1st & 3rd Friday, 12:30 p.m., Santa Cruz Room.

OB/GYN Surgical Pathology Conf.
Weekly, Friday, 7:30 a.m., Yavapai Rm.

Orthopedic X-Ray Conference
Weekly, Friday, 7:30 a.m., Santa Cruz Room.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201. Contact. E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact J. Burr Ross, M.D., Approved Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th f auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th floor auditor

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016 Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm
Weekly, Wednesday, 7:30-8:30 a.m.

Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference R A, Contact N. Wendell Todd, M.D.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact. Drs. L. Fairbanks & E.Y Hooper

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact. George Scharf, M.D. Approved Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm Contact. Medical Staff Secretary

Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm. Contact. H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 852 Contact W. S. Williams, M.D., Approved Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Loung

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Loung

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Loung

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Loung

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

North 18th Street, Phoenix, AZ, tact: Gerald L. Hansbro, M.D.

diac Conference
kly, Monday, 12:15 p.m., Auditorium.
st Conference
Monday, 12:15 p.m., Phillips itorium.
gery Conference
Tuesday, 12:15 p.m., Auditorium.
rgency Medicine Conference
Wednesday, 12:15 p.m., Auditorium.
diovascular-Thoracic Record Review
Wednesday, 12:15 p.m., Auditorium.
nonary Case Conferences
Thursday, 7:30 a.m., Phillips itorium.
chiatry Conference
Thursday, 7 a.m., Auditorium.
nbined Medical General Practice ference
Friday, 12:15 p.m., Auditorium.
cology Grand Rounds
Friday, 7:30 a.m., Auditorium.
thalmology Conference
Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1 W. St. Mary's Road, Tucson, AZ 03. Contact: see below.
thly Specialty Conference — Dept. of gery
Monday, 7:30 a.m., Century Rm. A., tact: Med. Staff Office.
nd Rounds: Medical Surgical, Family ctice, Pathology, Radiology
ekly, Thursday.
ergency Medicine Lectures
ekly, Thursday, 8 a.m., Century Rm. A.
ntal Health Update
Friday, 11:30-1:00 p.m., Century Rm. A.
diology Conference
ekly, Friday, 8:00-9:00 a.m., Century , Contact. Anthony Forte, M.D.

ST. JOSEPH'S HOSPITAL PHOENIX

West Thomas Road, Phoenix, AZ 13. Contact: Joseph C. White, M.D.
GYN Section Conference
& 4th Mondays, 12:30-1:30 p.m., Floor Conf. Rm.
etics Conference
ekly, Monday, 12:30 p.m., Pediatric artment.
iatric Rounds
ekly, Monday, Wed. & Friday, 10:30 a.m., iatric Department.
iatric Grand Rounds
Tuesday, 7:30-8:30 a.m., Contact: ipp Charlton, M.D.
G Conference
ekly, Tuesday, 12:30 p.m., Pediatric artment.
dical Grand Rounds
ekly, Wednesday, 8 a.m., 1st Floor Conf. om.
ting Professor Formal Presentation
ekly, Thursday, 8 a.m., PIMC.
ting Professor Informal Presentation
ekly, Thursday, 9:30 a.m., 1st floor Conf.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
3rd Tuesday, 12 p.m., Contact: Wm. Monteforte.
Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 p.m., Contact: Kim Sowards.
Current Concepts in Medicine
Weekly, Tuesday, 12 p.m., Auditorium.
Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 p.m., Contact: S. Salmon, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Perinatal Conference
2nd Monday, 7:30 p.m., Contact: J. Lohman, M.D.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Surgical Dept. Conference
2nd Monday, 12 Noon, Contact: C. Peter Crowe, Jr., M.D.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below Approved for Category 1 credit

Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact. Dr. Young

Medical Grand Rounds
Weekly. Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D

Surgical Grand Rounds
Weekly. Wed. 4:00 p.m., Contact. Dr Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 p.m., Rm. N318, Contact. Dept of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107, Contact. J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact: Dr Sibley

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D Approved for Category 1 credit.

Radiology Conference
1st Tuesday. 7:00 a m.

Operation Outreach
2nd Tuesday. 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday. 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724 Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit

Anesthesiology Board Review Conference
2nd & 4th Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4-5 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4-5 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact. John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., Weekly, Rm. 5505., Contact. Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Endocrinology Seminar
Weekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact. S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Manning.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly. Friday. 11:30 a.m., Contact. Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact. Dr. P.C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact. Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7.30 a.m., AHSC, Contact: Dr. C. Bamford

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr C.D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact. Dr. H Cross

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm C&D, Contact: Drs. Hameroff & Cork

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Cont: Dr. C.D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact Dr. P Finley

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact. Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC Contact. Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact Lillian Valdes-Cruz

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact. Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr Christenson.

Radiation Oncology Planning Conferenc
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact Dr Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon AHSC, Contact. Dr A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9.00 a.m., Rm. 5403, AHSC, Contact. Dr. Wangensteen.

Surgical Morbidity & Mortality Conferenc
Weekly, Wednesday, 8:00 a.m., Contact: Dr Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m. AHSC, Rm. 550

Toxicology Conference
Weekly, Tuesday, 8:00 a m., Contact. Dr Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4.30 p.m., AHSC, Contact. Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon AHSC & VA Hospital Contact. Dr. G W. Drach.

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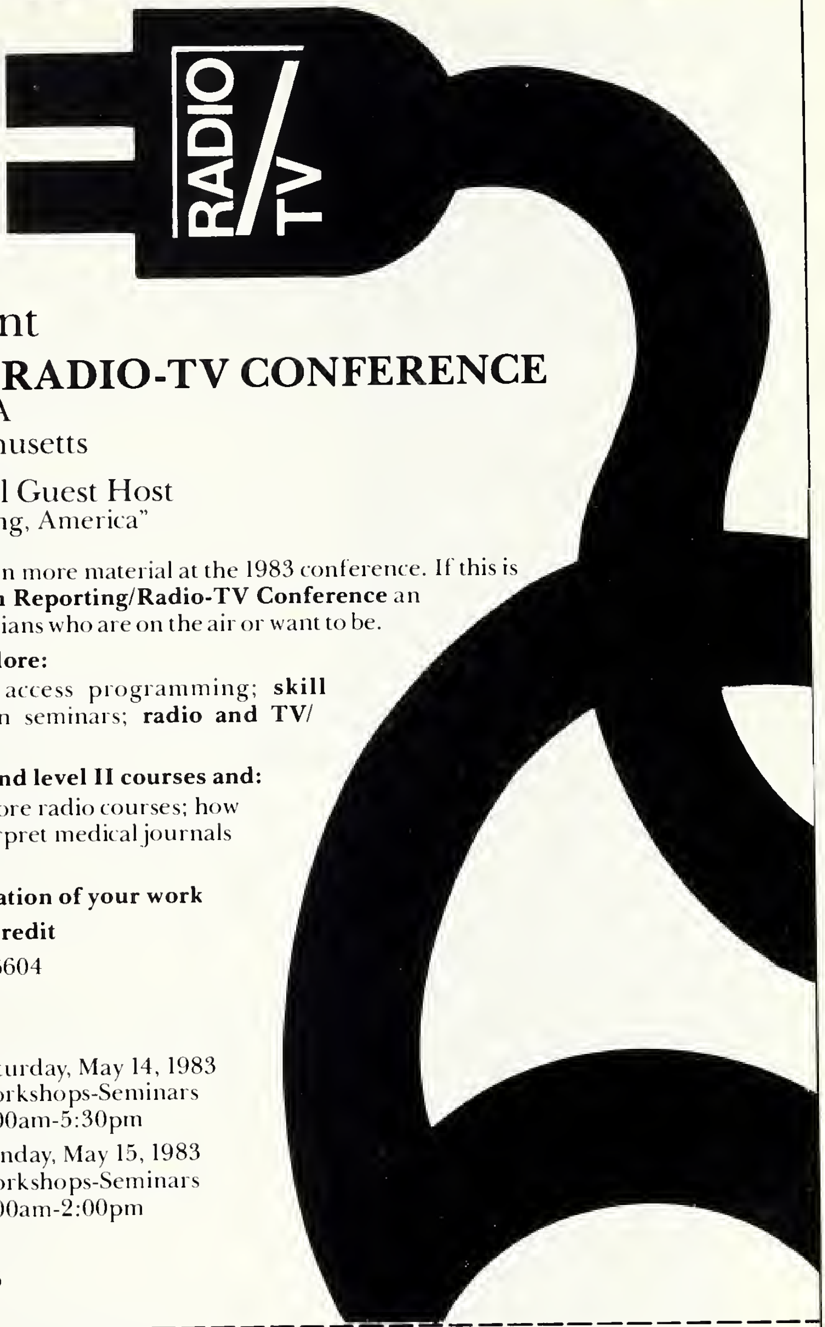

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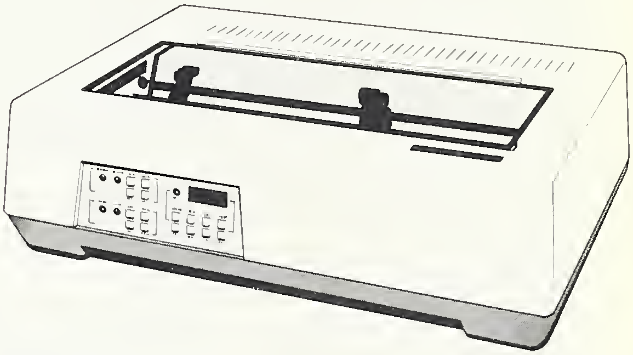

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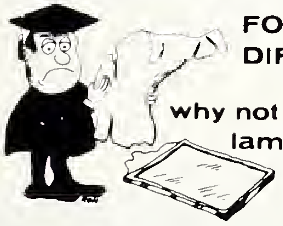

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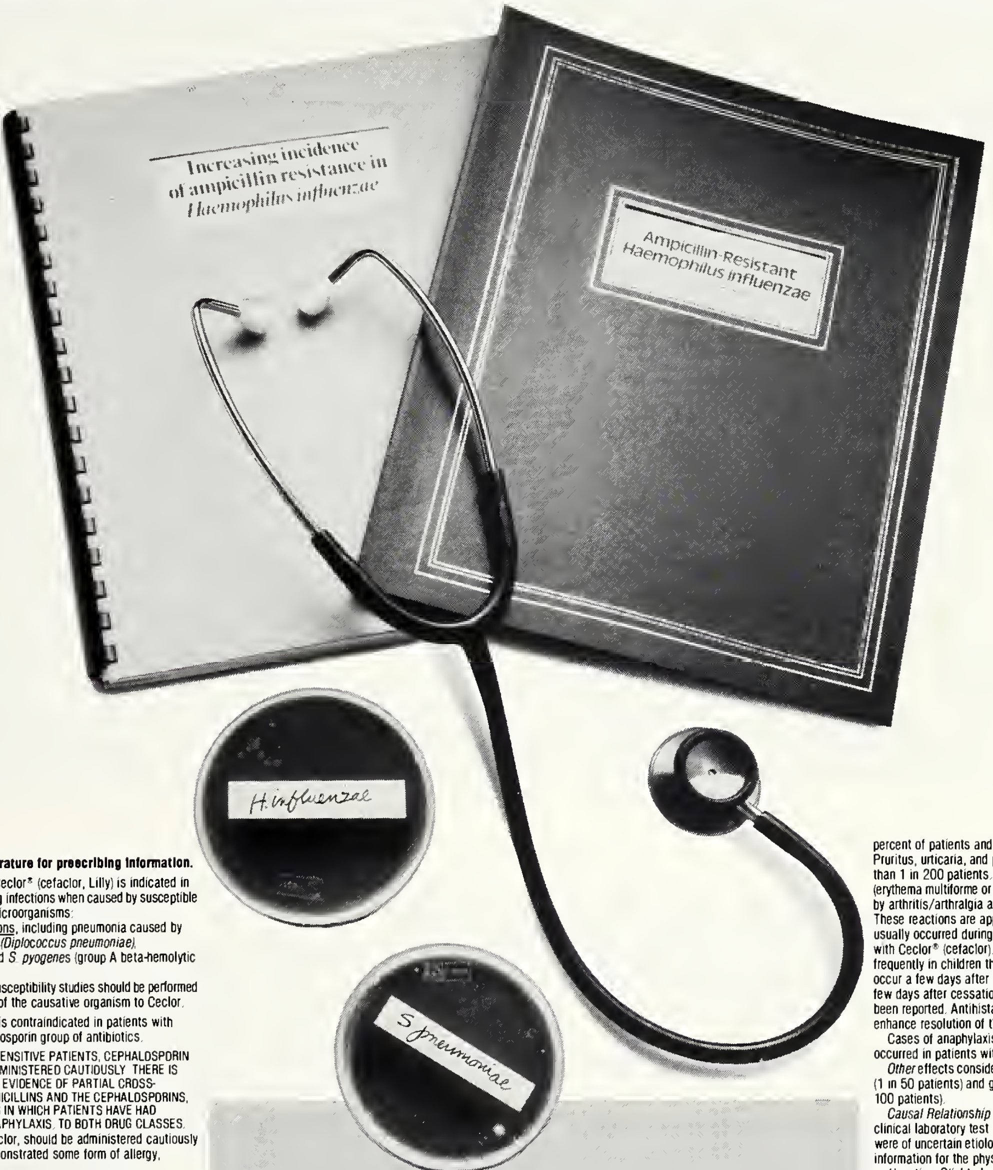
An added complication...
in the treatment of bacterial bronchitis*



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Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coomb testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy—Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Ceclor

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor® (cefaclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [100281R]

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.[8]

Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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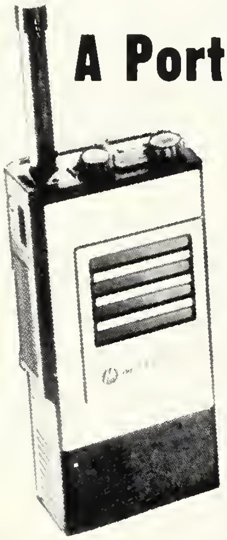

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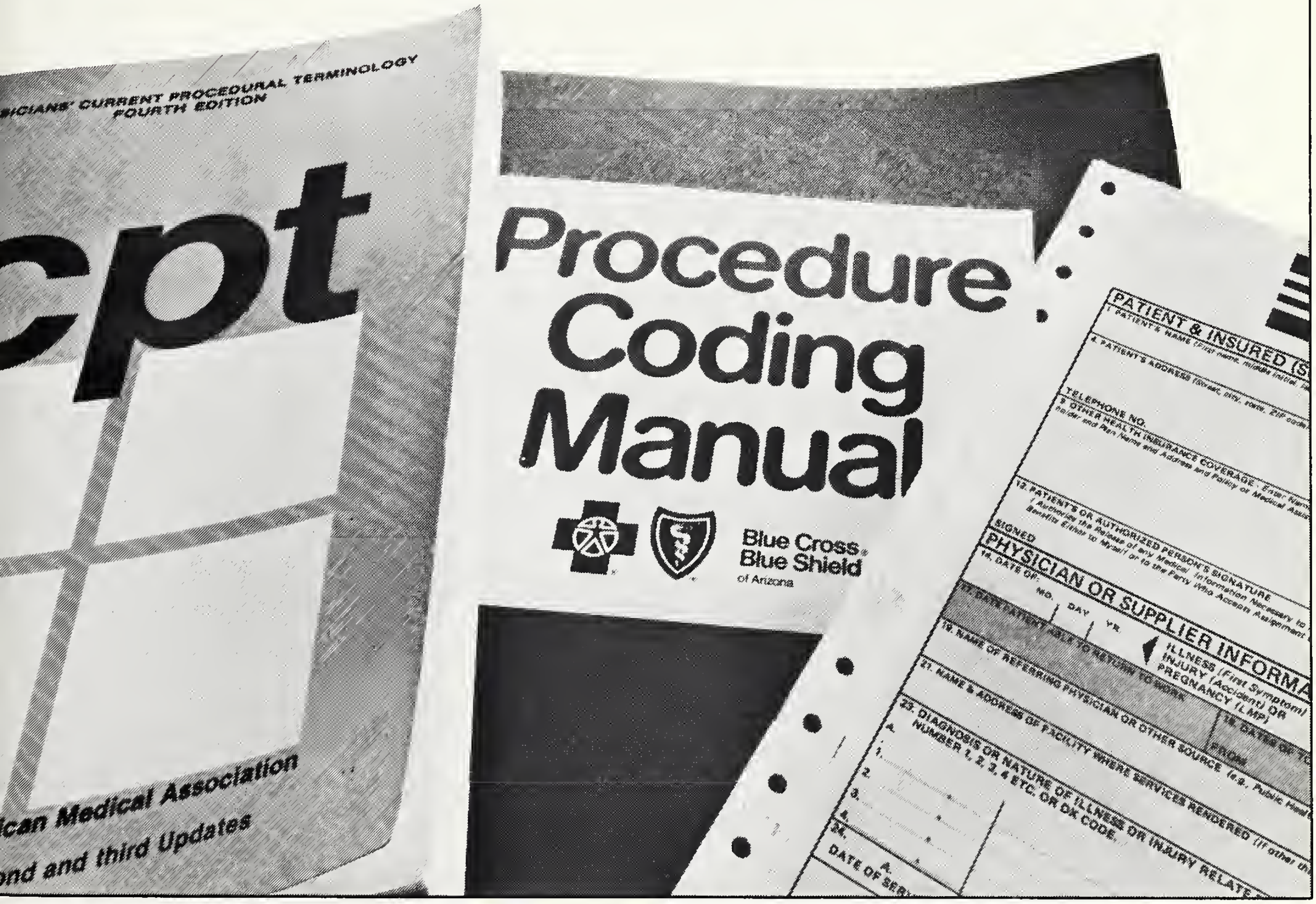

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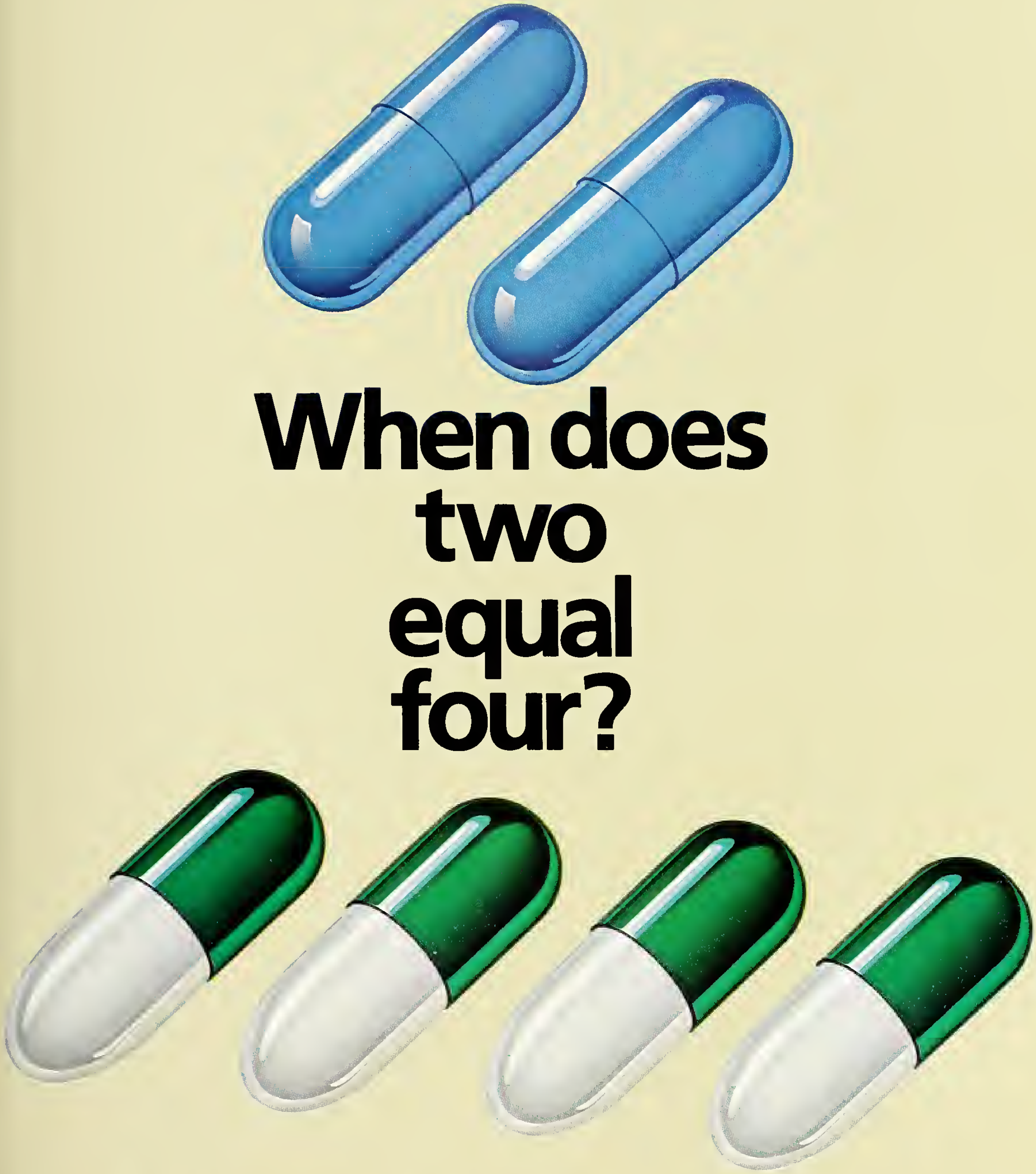
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INDICATIONS AND USAGE: These preparations are indicated for the treatment of infections caused by susceptible strains of designated microorganisms as follows: Respiratory Tract Infections (e.g., tonsillitis, pharyngitis, and lobar pneumonia) due to *S. pneumoniae* (formerly *D. pneumoniae)* and group A beta-hemolytic streptococci [penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever; Velosef (Cephradine, Squibb) is generally effective in the eradication of streptococci from the nasopharynx; substantial data establishing the efficacy of Velosef in the subsequent prevention of rheumatic fever are not available at present]; Otitis Media due to group A beta-hemolytic streptococci, *H. influenzae,* staphylococci, and *S. pneumoniae;* Skin and Skin Structures Infections due to staphylococci and beta-hemolytic streptococci; Urinary Tract Infections, including prostatitis, due to *E. coli, P. mirabilis, Klebsiella* species, and enterococci *(S. faecalis).*

Note: Culture and susceptibility tests should be initiated prior to and during therapy.

CONTRAINDICATIONS: In patients with known hypersensitivity to the cephalosporin group of antibiotics.

WARNINGS; *Use cephalosporin derivatives with great caution in penicillin-sensitive patients since there is clinical and laboratory evidence of partial cross-allergenicity of the two groups of antibiotics; there are instances of reactions to both drug classes (including anaphylaxis after parenteral use).* In persons who have demonstrated some form of allergy, particularly to drugs, use antibiotics, including cephradine, cautiously and only when absolutely necessary.

Pseudomembranous colitis has been reported with the use of cephalosporins (and other broad spectrum antibiotics); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with antibiotic use. Treatment with broad spectrum antibiotics alters normal flora of the colon and may permit overgrowth of clostridia. Studies indicate a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis. Cholestyramine and colestipol resins have been shown to bind the toxin *in vitro.* Mild cases of colitis may respond to drug discontinuance alone. Manage moderate to severe cases with fluid, electrolyte and protein supplementation as indicated. Oral vancomycin is the treatment of choice for antibiotic-associated pseudomembranous colitis

produced by *C. difficile* when the colitis is severe or is not relieved by drug discontinuance; consider other causes of colitis.

PRECAUTIONS: General: Follow patients carefully to detect any side effects or unusual manifestations of drug idiosyncrasy. If a hypersensitivity reaction occurs, discontinue the drug and treat the patient with the usual agents, e.g., pressor amines, antihistamines, or corticosteroids. Administer cephradine with caution in the presence of markedly impaired renal function. In patients with known or suspected renal impairment, make careful clinical observation and appropriate laboratory studies prior to and during therapy as cephradine accumulates in the serum and tissues. See package insert for information on treatment of patients with impaired renal function. Prescribe cephradine with caution in individuals with a history of gastrointestinal disease, particularly colitis. Prolonged use of antibiotics may promote the overgrowth of nonsusceptible organisms. Take appropriate measures should superinfection occur during therapy. Indicated surgical procedures should be performed in conjunction with antibiotic therapy.

Information for Patients: Caution diabetic patients that false results may occur with urine glucose tests (see PRECAUTIONS, Drug/Laboratory Test Interactions). Advise the patient to comply with the full course of therapy even if he begins to feel better and to take a missed dose as soon as possible. Tell the patient he may take this medication with food or milk since G.I. upset may be a factor in compliance with the dosage regimen. The patient should report current use of any medicines and should be cautioned not to take other medications unless the physician knows and approves of their use (see PRECAUTIONS, Drug Interactions).

Laboratory Tests: In patients with known or suspected renal impairment, it is advisable to monitor renal function.

Drug Interactions: When administered concurrently, the following drugs may interact with cephalosporins:

Other antibacterial agents — Bacteriostats may interfere with the bactericidal action of cephalosporins in acute infection; other agents, e.g., aminoglycosides, colistin, polymyxins, vancomycin, may increase the possibility of nephrotoxicity.

Diuretics (potent "loop diuretics," e.g., furosemide and ethacrynic acid) — Enhanced possibility for renal toxicity.

Probenecid — Increased and prolonged blood levels of cephalosporins, resulting in increased risk of nephrotoxicity.

Drug/Laboratory Test Interactions: After treatment with cephradine, a false-positive reaction for glucose in the urine may occur with Benedict's solution, Fehling's solution, or with Clinitest® tablets, but not with enzyme-based tests such as Clinistix® and Tes-Tape®. False-positive Coombs test results may occur in newborns whose mothers received a cephalosporin prior to delivery. Cephalosporins have been reported to cause false-positive reactions in tests for urinary proteins which use sulfosalicylic acid, false elevations of urinary 17-ketosteroid values, and prolonged prothrombin times.

Carcinogenesis, Mutagenesis: Long-term studies in animals have not been performed to evaluate carcinogenic potential or mutagenesis.

Pregnancy: Teratogenic Effects/Impairment of Fertility — Category B: Reproduction studies have been performed in mice and rats at doses up to 4 times the maximum indicated human dose and have revealed no evidence of impaired fertility or harm to the fetus due to cephradine. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

Nursing Mothers: Since cephradine is excreted in breast milk during lactation, exercise caution when administering cephradine to a nursing woman.

Pediatric Use: Adequate information is unavailable on the efficacy of b.i.d. regimens in children under nine months of age.

ADVERSE REACTIONS: Untoward reactions are limited essentially to G.I. disturbances and, on occasion, to hypersensitivity phenomena. The latter are more likely to occur in persons who have previously demonstrated hypersensitivity and those with a history of allergy, asthma, hay fever, or urticaria.

(continued on next page)

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(continued)

The following adverse reactions have been reported following use of cephradine: G.I. — Symptoms of pseudomembranous colitis can appear during antibiotic therapy; nausea and vomiting have been reported rarely. Skin and Hypersensitivity Reactions — mild urticaria or skin rash, pruritus, joint pains. Blood — mild transient eosinophilia, leukopenia and neutropenia. Liver — transient mild rise of SGOT, SGPT, and total bilirubin with no evidence of hepatocellular damage. Renal — transitory rises in BUN have been observed in some patients treated with cephalosporins; their frequency increases in patients over 50 years old. In adults for whom serum creatinine determinations were performed, the rise in BUN was not accompanied by a rise in serum creatinine. Others — dizziness, tightness in the chest, and candidal vaginitis.

DOSAGE: Adults — For respiratory tract infections (other than lobar pneumonia) and skin and skin structures infections: 250 mg q. 6 h or 500 mg q. 12 h. For lobar pneumonia: 500 mg q. 6 h or 1 g q. 12 h. For uncomplicated urinary tract infections: 500 mg q. 12 h; for more serious UTI, including prostatitis, 500 mg q. 6 h or 1 g q. 12 h. Severe or chronic infections may require larger doses (up to 1 g q. 6 h.).

Children over 9 months of age — 25 to 50 mg/kg/day in equally divided doses q. 6 or 12 h. For otitis media due to *H. influenzae:* 75 to 100 mg/kg/day in equally divided doses q. 6 or 12 h but not to exceed 4 g/day. Dosage for children should not exceed dosage recommended for adults. There are no adequate data available on efficacy of b.i.d. regimens in children under 9 months of age.

For full prescribing information, consult package insert.

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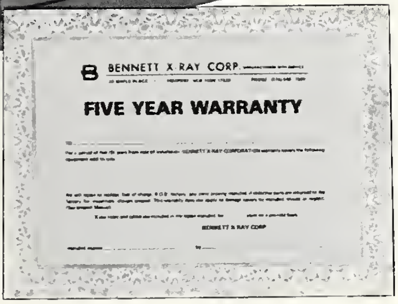

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Handling Occupational Disease Claims

Common Problems for Attorneys and Physicians

William T. Keane, J.D., Sc.D.

Editors:
Richard J. Lemen, M.D.
Bernard Levine, M.D.
John J. Seidenfeld, M.D.

The general public, unions and indeed, attorneys, are becoming more and more knowledgeable about occupational disease claims, be they pulmonary or any other type. There are several reasons why we are becoming more knowledgeable. Since the Occupational Safety and Health Act was passed in 1971, there has been a mandatory requirement that employers record the exposures to toxic chemicals experienced by their employees. They are required to monitor their work environments with air sampling equipment and make permanent records of exposures. They are required to release that information to employees should they request same. A recent decision by the Occupational Safety and Health Administration requires that if employees want to see their own occupational medical files, which are maintained with occupational physicians for that particular plant, they have the absolute right to do so. Employers have to collect exposure and medical data. Employees are learning about occupational disease claims and are more prone to concern about health and safety when they become ill or have a chronic long-term pulmonary problem. Another reason we are all becoming more aware is the amount of literature published in the last five years on occupationally acquired diseases.

There are texts written specifically for workers by physicians who have been hired by unions. It would be very elementary reading for a physician, but it is very informative for workers. An example of some of them are; *Muscle and Blood*, by Rachel Scott; *Peril on the Job*, by Ray Davidson; *Work is Dangerous to Your Health*, by Dr. Gene Stilman and Dr. Susan Daum; *Bitter Wages*, by Ralph Nader's group; and *Expendable Americans*, by Paul Browder.

Toxic Torts is a text published by the American Trial Lawyer's Association. Tort is a word of legal art and is used to describe any type of injury claim. The book deals with injury claims related solely and exclusively to toxic chemicals. Workers and attorneys are being educated to recognize these problems. Predictably, we are going to experience a gradual increase in the number of occupational disease claims. If an employee is injured on the job in Arizona or any other state in the Union, the employee is given only one remedy. The single remedy the employee has is a Workmen's Compensation claim. They cannot file a civil law suit.

Years ago in Arizona the only occupational diseases which were compensable were those specifically listed in a statute. The statute also contained an itemized list of approximately twenty-five toxins. If a person developed an occupational disease that *did not* fall within that list the disease was not compensable. Our court system recognized this to be really unfair to injured workers. The court began compensating occupational disease claims as though they were injuries by accident on the job, rather than occupational disease. Therefore, workers received compensation despite their disease not appearing on the approved schedule of occupational diseases. In 1971 and 1973, our Legislature amended the whole occupational disease scheme in Arizona by passing new statutes and repealing the statute that contained the schedule—the list of twenty-five approved occupational disease. These new statutes

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Presented to a meeting of the Arizona Thoracic Society, November 10, 1982. Reprint requests to Clyde L. Giddings, Program Associate, Arizona Lung Association, 1239 East McDowell Road, Phoenix, Arizona 85006.

dictate that any kind of occupational disease, whether it was heretofore known or not, will now become compensable.

In order to be compensable the injured worker must be able to prove, through evidence, six particular criteria. The specific references for these six criteria is A.R.S. 23-901-01. In summary form, the criteria of compensability are as follows:

1. The injured worker must prove that there is a direct causal connection between the conditions under which the work is performed and the occupational disease.
2. The disease can be seen to have followed as a natural incident of the work as a result of the exposure occasioned by the nature of the employment.
3. The disease can be thoroughly traced to the employment as the proximate cause.
4. The disease does not come from a hazard to which workmen would have been equally exposed outside of the employment.
5. The disease is incidental to the character of the business and not independent of the relationship of the employee and the employer.
6. The disease, after its contraction, appears to have had its origin in a risk connected with the employment and to have flowed from that source as a natural consequence, although it need not have been foreseen or expected.

Let's assume a physician has a patient that can prove a direct cause and effect relationship, i.e., the employment environment caused the pulmonary problem. If the patient has been exposed to that chemical or gas over the years with multiple employers, which employer would be responsible for paying the compensation? There is a specific statute that covers that area and the general rule is, the employer responsible for paying the benefits for the occupational disease is the employer where the worker was last injuriously exposed. There are two diseases that are exceptions; asbestosis and silicosis. The exception is based upon the knowledge that long latent periods exist between exposure and development of the debilitating disease. With respect to these two diseases the employer that is liable is where the worker was last exposed for two years or more.

Now, let's review some of the practical problems that confront a physician. They diagnose work related illness in one of their patients. The patient contacts an attorney that will handle this kind of claim. Such practical problems become mutual problems as the doctor and lawyer try to assist each other in processing the claim to help the patient get compensation for their debilitating disease.

The first problem to be confronted is the statute that requires that the claim be filed with the Industrial Commission within one year following the exposure or the injury. We know these kinds of pulmonary disease arise over many years and you can't pick one particular point in time where the disease commenced. The Statute of Limitations of one year was primarily drafted for traumatic injuries such as when a worker ruptures a disc, fractures a leg, or tears a rotator cuff, since th physician can pinpoint the particular time the inju occurred.

There is a modification of that strict rule f occupational diseases. An occupational disease claim valid as long as filing has been done when the inju becomes manifest, or when the claimant or injure worker knows, or in the exercise of reasonable diligenc should know, they have sustained a compensable inju (i.e., work related pulmonary disease). This point will b used by a defense attorney in an attempt to defeat th patient's claim. He will review the physicians office not to establish a basis for such a defense. For exampl office records may reflect that a patient stated, "Ge Doc, you know I really wonder if this lung proble could have something to do with my work? I know seem to get better on weekends, but gee, I don't know If more than a year has transpired from the time th physician wrote that in the records to the point whe the patient filed a claim, a defense attorney wou contend that this entry in the medical reco substantiates that the patient either knew, or wi reasonable dilligence should have known that the wo was causing the problem, therefore the claim should b barred by the one-year Statute of Limitations.

With respect to medical records, doctors have to try differentiate any other underlying pulmonary diseas from the occupational disease. For example, if th patient was a cigarette smoker for twenty years th defense attorney will attempt to contend that all of th pulmonary problems were caused by cigarette smokin Additionally, the defense has the right to retain physician who will examine and perform pulmona function tests on the patient and there is a reasonab probability they will testify that all of the pulmona problems were due to smoking and were not caused b employment.

Immediately after getting involved in one of thes claims an attorney should review the medical literatu and make that review available to the treating physicia The easiest way to accomplish this objective in th rapidly expanding field of occupational pulmona diseases, is to perform a computerized literature searc Another thing to be done immediately is lea something about the level of exposure in the workplac the concentration of the specific toxicant in th workplace to which the patient was exposed. Ma times doctors are going to have trouble trying to identi the specific toxicants that may indeed be causing th problem. The patient's attorney will be able to subpoe from the employer any industrial hygiene air monitori studies that the employer may possess that define th concentration of the toxicant which was in the air whe the patient worked for that employer. He should al procure, for the doctor, the acceptable threshold lin values (TLV) which have been promulgated by th Occupational Safety and Health Administration. Th threshold limit value is that level of a toxicant in th ambient air of the workplace which has been defined b he federal government to be a safe working environment for a person working in that environment for eight hours a day, five days each week over a forty year worklife. The TLV's can then be compared with the air concentrations to which a patient was occupationally exposed.

As indicated above, the defense has the right to have the patient examined by another pulmonary physician. They will also run pulmonary function tests and the treating physician would want the attorney to obtain the opposing physician's report and the pulmonary function test results so they can be compared with those of the treating physician.

Additionally, doctors should seriously consider, which this author has done in all of the recent cases he has handled, pulmonary challenge testing of the patient. It is recognized that when dealing with a potent allergen a risk of anaphylactic shock exists. In those cases where a pulmonary challenge test has been performed, however, it has been extremely persuasive with the administrative law judge. Pulmonary challenge testing is done in a chamber exposing the patient to what the doctor believes to be the offending toxicant. The physician may also want to expose the patient to other challenges gathering both pre and post exposure pulmonary function test results. The doctor may want the patient to be examined by a group of three pulmonary physicians who will review all of the medical records and then conduct, at one location, and at one time, a physical examination of the patient, perform pulmonary function testing or whatever else they deem necessary and write one concensus consultative report. That report will then be sent to the Industrial Commission, introduced into evidence, and one of the three physicians who had signed it will testify as to the consensus opinion of all three examining physicians. The benefits are that there is but one report and one physician testifying as an expert, yet there is the impact of the opinions of three pulmonary specialists. This is something the physician may want to consider if the patient has the financial ability to fund such an undertaking. Everything recommended to this point must be paid for by the patient.

Another technique employed in these cases is to retain another consultant who is a scientist referred to as an industrial hygienist. An industrial hygienist is basically an engineer who knows and understands chemical processes in industry and also has some biological training so they act as in interface between engineering and medicine.

The hygienist can identify the specific toxicant in the air by monitoring the air if the attorney can, through court order, get them into the plant to take air samples. If the employer has previously monitored the air they can look at that datum, evaluate it, and make comparisons to the TLV's to decide whether that environment was safe or unsafe. They can review literature in the field of industrial hygiene and summarize that information for the attorney and physicians. This attorney has found industrial hygienists very helpful in pulmonary disease cases. Again, the patient must bear the cost associated with retaining this expert.

One additional expert the patient may consider employing is an allergist and/or immunologist. They could perform challenge testing such as a pin prick testing, IgE antibody testing for specific IgE antibodies, as well as other tests intended to prove the direct causal relationship between the etiologic agent and the disease. Again, these kinds of tests by the allergist would have to be paid by the patient.

We have described for you the optimum case preparation that attorneys would like to possess for clients prior to an administrative law hearing. Many times the patient can't afford these engineering and medical determinations. If the patient can't afford them, there is a relatively new law that would make it financially feasible for the patient. ARS S23-901-03 permits either the patient, the employer or the Industrial Commission to request the appointment of a medical panel.

The Industrial Commission must appoint a panel of expert consultants consisting of three physicians and one industrial hygienist. The law requires that the three physicians be licensed in Arizona, with five years of practice in treating and diagnosing the particular disease for which the claim is submitted, and have experience in interpreting x-ray films thereof.

The Industrial Commission has relied on the recommendations of their Medical Advisor, Dr. Carlos Craig, to recommend pulmonary physicians in Tucson and Phoenix to serve on this three physician panel. The names of those physicians have now been approved by the Industrial Commission. The Industrial Commission also has the authority to appoint to the expert committee an industrial hygienist to serve as an advisor. If the committee wants any information on the work environment, it can rely upon the hygienist.

The committee may request the treating physician to attend any examinations of the patient and to meet with them to obtain information on the patient. If patient is examined by such a Committee it is strongly recommended that the treating physician accompany the patient. If there is a patient who is not articulate and who is not sufficiently intelligent to give a reliable history the treating doctor may supply additional information inadvertently overlooked or forgotten by the patient. The treating physician should try to submit to the committee office records, or any other medical records that the attorney has gathered.

The importance of the expert committee is that all fees associated therewith must be paid by the Industrial Commission. This is one way the impecunious patient may obtain the benefit of additional expert assistance in the processing of the occupational disease claim.

This attorney has found all of these techniques beneficial in processing occupational disease claims. Utilization of them should increase significantly the probability of success.

Gastroenterology
& Liver Disease

Summer Diarrhea in an Indian Population

Barbara Runkle
Ronald Dahl
John Coulehan, M.D.
Richard Michaels, M.D.
Thomas Welty, M.D.
Alice Cushing, M.D.

Editors:
George E. Burdick, M.D.
Stephen Glouberman, M.D.
Steven R. Kanner, M.D.
Robert Sanowski, M.D.

Abstract

In 120 consecutive Navajo patients with summer diarrhea, 10.0% had *Campylobacter jejuni*, 6.7% shigella and 0.8% salmonella isolated from stool samples or rectal swabs. From an unselected subset of 38 patients, five (13.2%) had rotavirus identified. Of 42 patients who had stool examined for ova and parasites, seven (16.7%; or 5.8% of the whole group) had Giardia cysts. Patients who ultimately were found to have shigellosis were more likely to be treated presumptively with antibiotics, and to have polymorphonuclear leukocytes and blood in their stool, than those with other pathogens or culture-negative patients. Presumptive treatment for shigella had a 75% sensitivity, 83% specificity, and a predictive value positive of 24%. No cases of shigellosis were observed in infants under one year of age. On the other hand, four cases of Campylobacter and two of giardia were noted in infants.

Summer diarrhea is a frequent and often severe illne among Southwestern Indians, particularly children. A in other population groups, most cases are presumed t be viral in origin and are treated symptomaticall Shigella is the most frequent bacterial pathoge identified,[1,2] except in point-source outbreaks.[3] I recent years, *Campylobacter jejuni* has been implicate in a significant percentage of acute diarrheal illness i many areas of the world.[4-6] Similarly, the protozoar Giardia, is now implicated as a cause of acute an subacute abdominal symptoms with diarrhea.[7] Earlie surveys of diarrheal disease among Southwester Indians have not included these organisms. The purpos of this study was to ascertain the etiology of summe diarrhea in a rural Navajo population, with particula emphasis on treatable agents; and to determine i clinical characteristics might enable physicians to mak specific diagnoses before culture results were available

Methods

Tuba City Indian Hospital is located on the wester part of the Navajo Indian Reservation in Norther Arizona. It serves as a primary care facility for a Servic Unit encompassing about 5,000 square miles and 15,00 people, while serving as a referral care center fo Kayenta Service Unit with about 10,000 people. Th facility is a modern 100 bed hospital with a medical staf of 22 physicians. One hundred-twenty consecutiv patients of any age who presented to the Tuba Cit Outpatient Clinic or emergency room with th complaint of "diarrhea" during the period from June 1 through August 5 were studied if the diarrhea was of les than one week duration and the patients had receive no medications. Medical staff completed a questionnaire on each of the patients which included age an sex, the presence of specific symptoms and objectiv findings, home and family characteristics, an presumptive treatment.

All 120 patients had stool or rectal swab cultured fo enteric pathogens (Salmonella, Shigella) according t standard techniques.[8] For *Campylobacter jejuni* culture stool or swabs were smeared on Campy Blood Aga (Remel) during the first half of the study and o Campylobacter Agar (BBL 21727) during the second half These plates were incubated at 42°C in BBL Campy Pak I Gas Generator envelopes in sealed jars with th palladium catalyst removed to provide a microaerophilic environment. Plates were checked for growth at 24-hour intervals and were discarded at 48 hours if n growth was observed. If growth occurred, all colon types were tested for oxidase activity and positive one were gram stained, subcultured onto two plain bloo agar plates and incubated at 42°C within a microaerophilic jar and outside the jar, respectively. *C. jejun* were identified on the basis of gram stain and growth inside the jar but not outside. Attempts were made t visit the homes of all patients who had positive *C. jejun* cultures in the prospective study to reculture them after five or more days and to obtain stool cultures from household contacts.

From: University of Pittsburgh, Departments of Community Medicine and Pediatrics, Pittsburgh, Pennsylvania (Barbara Runkle, Ronald Dahl, John Coulehan, M.D. and Richard Michaels, M.D). Dr. Welty from the Indian Health Service Hospital, Tuba City, Arizona, and Dr. Cushing, Department of Pediatrics, University of New Mexico, Albuquerque, New Mexico.

Table 1
Selected Clinical Characteristics by Infections Agent Identified

Characteristics	Shigella (n=8) # Present	%	Campylobacter (n=12) # Present	%	Negative (n=90) # Present	%
od in stool on mination	6*	75%	3	25%	11*	12%
ucus in stool on amination	4	50%	2	17%	19	21%
3Cs in stool	5*	62%	3	25%	7*	8%
miting	5	62%	3	25%	35	39%
ver > 38°C	4	50%	6	50%	32	35%
esumptive Treatment Shigella	6*	75%	3	25%	17*	19%

In these characteristics there were significant differences betwen Shigella positive and negative groups. (X^2 with continuity rrection, $p<0.05$).

Stool samples were obtained from 38 consecutive atients without regard for clinical presentation during a wo week period, frozen in viral culture vials and sent to ne University of New Mexico where they were assayed or rotavirus by enzyme-linked immunosorbent assay ELISA).[9] Forty-two (35%) stool samples were examined or ova and parasites because of "clinical suspicion" of Giardia: duration of diarrhea (three or more days) and pper gastrointestinal symptoms. No protocol for election was observed.

esults

In 120 cases studied, the median age was 22 months vith 35 (29%) less than one year of age. The bacterial athogens identified included eight shigella (6.7%); 12 campylobacter (10.0%); and one salmonella (0.8%). Of 38 samples assayed for rotavirus five (13.2%) cases were dentified. Forty-two specimens were examined for giardia and seven (16.7%) were found to contain giardia cysts. Assuming that all other cases would have been negative for giardia, this gives a minimum prevalence of 5.8% (7 of 120) of giardia-positive stool in unselected cases of summer diarrhea at Tuba City. No pathogen was dentified in 90 (75%) stools, but 57 of these were not assayed for rotavirus. Three patients had dual infections: one with campylobacter and shigella; one with giardia and shigella; and one with campylobacter and rotavirus. Two of the 120 patients were hospitalized for gastroenteritis and had negative cultures and assays.

The male:female ratio for various specific pathogen was—Shigella 4:4, Campylobacter 8:4, Giardia 4:3 and Rotavirus 2:3. None of the patients with Shigella-positive stool were under the age of one year while four with Campylobacter (33%), two with Giardia (29%) and 29 (32%) of culture-negative cases were in the first year of life. Table 1 illustrates clinical characteristics of Shilgella, Campylobacter, and culture-negative cases. No differences in clinical features were observed when either Campylobacter, Giardia, or Rotavirus were compared sequentially to culture-negative cases. Shigella-positive patients were more likely to have blood and polymorphonuclear leukocytes in the stool, and to be treated presumptively, with trimethoprim-sulfamethoxazole, than culture-negative patients. Such features as blood in the stool and polymorphonuclear leukocytes on microscopic stool examination led to presumptive treatment in 75% of those who actually had Shigella. Table 2 illustrates the sensitivity, specificity and predictive value of presumptive treatment for Shigella in this population. As can be seen, there was a 24% likelihood that a given patient treated with trimethoprim-sulfamethoxanzole actually had shigellosis, although this was increased to 50% if infants under age one year were excluded. Decision not to treat, however, had a very high predictive value. Many of the children treated were under one year of age, although no cases of Shigella occurred in that age group.

Among the 120 patients, 49 (40.8%) had running water in their homes and 41 (34.2%) had indoor toilets. Twelve (34.3%) of those under a year of age were being breastfed. There were no significant differences between those with specific pathogens and those with negative stools in water availability, indoor toilets or breastfeeding.

Six of twelve patients with Campylobacter were recultured from five to twenty-one days after their visit. One of these was still symptomatic at five days although he had received two days therapy with oral Erythromycin prior to reculturing. The second culture was negative. Five others were asymptomatic, but two of these were stool culture-positive after nine to thirteen days. Neither had been treated with Erythromycin. Sixteen household contacts of these six Campylobacter patients had stool cultures and of these five were positive, including three of four in one family. None of these contacts were symptomatic when cultured.

Discussion

Of patients with summer diarrhea seen at Tuba City Hospital, ten percent had *Campylobacter jejuni* and

Table 2
Adequacy of Presumptive Treatment for Shigella

Parameter	Explanation	All Patients (%)	All Patients Age On Year or Over (%)
Sensitivity	Those with clulture-positive for Shigella who were treated initially	75%	75%
Specificity	Those with culture-negative for Shigella correctly not treated	83%	92%
Predictive Value Positive	The proportion of those presumptively treated who actually had Shigella	24%	50%
Predictive Value Negative	The proportion of those not treated presumptively who actually did not have Shigella	98%	97%

about seven percent had shigella isolated from their stool. A minimum six percent had documented Giardiasis while about 13% had rotavirus. Only shigella-positive cases presented clinically distinctive characteristics.

The occurrence of *Campylobacter jejuni* in acute diarrhea was similar to that reported from series in underdeveloped countries and more than reported in series from developed countries.[6] While no studies among healthy controls were done at Tuba City, other large series in North America and Europe reported one percent or less campylobacter isolation from asymptomatic individuals. In two smaller series from South Africa and Bangladesh 16% or 18% of healthy controls were Campylobacter-positive, but excluding these, only two percent of 676 asymptomatic controls in five studies from developing countries had positive cultures for C. *jejuni*. The 2:1 male:female ratio is consistent with a male excess observed in some, but not all, other studies.[4,6] There is no explanation evident for this male preponderance of clinical illness. In this series campylobacter enteritis was mild and indistinguishable from culture-negative enteritis. Only one case was treated with a specific antibiotic (Erythromycin) because of continued symptoms after culture results were available; otherwise, clinical improvement was such that antibiotics were not prescribed. Thus, although Campylobacter appears to be a frequent cause of diarrhea in this Navajo population it is unlikely that the added expense of culturing this fastidious organism is warranted, except for cases in which the illness fails to improve on symptomatic treatment.

No infants under age one year were shown to hav shigellosis. This is inconsistent with past experience i which a substantial percentage of shigellosis case occurred in patients less than one year of age.[10] If thi drop is confirmed, other causes for diarrhea should b sought more carefully in the infant age group. I particular, giardia, a pathogen requiring specific treatment, was found in two infants and campylobacter wa found in four. Both should be considered in cases o acute enteritis which fail to resolve promptly.

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Geriatrics

Reversible Causes of Urinary Incontinence in Elderly Patients

Barry D. Weiss, M.D.

Abstract

Urinary incontinence occurs in 10% to 25% of geriatric patients. The proportion of cases due to reversible causes is unknown, but is thought to be large. Reversible etiologies include outflow obstruction (fecal impaction or prostatic enlargement), bladder inflammation infection, atrophy, stones), stress incontinence, nervous system depression due to drugs or disease, mpaired mobility, autonomic drug side effects and psychiatric illness.

Key Words: Urinary Incontinence

Urinary incontinence is a common condition which occurs in 10% to 25% of ambulatory geriatric patients.[1-5] The condition is probably more common among their patients than physicians suspect, because patients usually do not volunteer information about it and many physicians fail to ask about it.

The true prevalence of urinary incontinence is difficult to state with certainty because of the varying methodologies which have been used to gather data and define incontinence. Questionnaire surveys mailed to patients find that approximately seven percent of men and eleven percent of women over the age of 65 experience involuntary leakage of urine at inappropriate times twice or more per month.[1]

Surveys utilizing in-person interviews in the homes of geriatric patients yield somewhat higher figures. Brocklehurst, et al., found that some urinary incontinence occurs in 17% of men and 23% of women.[2] Others report that 11% of males and 17% of females in a arge ambulatory population are incontinent on some occasions.[3] Severe incontinence, defined as that which occurs continuously or on a daily basis, occurs in only about five percent of elderly men and women who live at home.[4,5]

For purposes of diagnosis and management, it is useful to consider geriatric urinary incontinence as being due to either established or transient etiologies. The proportion of all cases which are transient is not known, but it is generally felt to be large. These latter cases are important to identify because they are potentially reversible and treatment is directed at the cause of the incontinence rather than at the incontinence itself; the various reversible causes of incontinence are listed below. General history, physical and laboratory examination is usually adequate to determine the presence of reversible conditions.

Outflow Obstruction

Obstruction of urine flow at the bladder neck can lead to urinary retention and distention of the bladder, with subsequent incontinence by overflow. Obstruction with overflow due to fecal impaction is said to be the most common cause of reversible incontinence, although inadequate documentation exists in the literature to support this contention.[6] A large fecal mass in the rectal vault is thought to obstruct the outlet of the adjacent bladder; treatment involves disimpaction.

The other common obstructive cause of transient incontinence is prostatic enlargement, either due to benign or malignant disease. As in incontinence due to fecal impaction, prostatic obstruction of the bladder outlet leads to urinary retention with overflow. Proper management usually involves prostatic resection, generally by the transurethral route.

Bladder Inflammation

A second major etiology of transient urinary incontinence is inflammatory disease of the bladder. Inflammation increases the sensitivity of the bladder wall to distention, leading to more intense and early activation of the detrusor reflex which cannot be overridden by inhibitory centers in the brainstem and cerebrum. Acute urinary tract infection is a very common cause within this category.[7] Chronic bacteruria, however, has not been associated with loss of urinary control.[2,8]

By similar mechanisms, atrophic vaginitis due to hypoestrogenism can result in inflammation within the bladder. The estrogen sensitive stratified squamous epithelium of the vagina also lines the urethra and, in some women, extends into the bladder trigone. Atrophic urethritis and trigonitis can cause bladder irritability and incontinence. The presence of atrophic vaginitis in a woman with non-stress incontinence should suggest this diagnosis and a trial of estrogen replacement therapy, either orally or intravaginally, may eliminate the symptoms.[6,7,9] Bladder irritation due to calculi or carcinoma should also be included in this category of inflammatory disease; cystoscopy is usually diagnostic and should be considered in cases that fail to respond to other treatments.

From: University of Arizona Health Sciences Center, Dr. Weiss is Assistant Professor, Department of Family and Community Medicine. Reprint requests to Barry Weiss, M.D., 1450 North Cherry, Tucson, Arizona 85719.

Stress Incontinence

Another major cause of reversible incontinence is female stress incontinence. The proportion of all female incontinence due to this etiology varies with the population studied. Among gynecological patients with urinary incontinence, 75% to 80% of cases will be due to true anatomic stress incontinence. However, in geriatric incontinence clinics, female stress incontinence is found to be uncommon.[10] It should be noted that approximately 40% of all women, many of whom are nulliparous, experience occasional stress incontinence.[11]

Typical manifestations of true stress incontinence include the loss of urine in small quantities, without significant bladder emptying, in association with sudden increases in intraabdominal pressure and unaccompanied by the urge to void. The most important diagnosis to exclude is "pseudo-stress incontinence" due to unstable bladder (detrusor hyperactivity). In pseudo-stress incontinence, a hyperactive detrusor muscle is stimulated only by repetitive increases in intraabdominal pressure. Thus, the patient with pseudo-stress incontinence will lose urine after the fourth or fifth cough rather than on the first. The urine flow continues after intraabdominal pressure returns to normal, whereas in true stress incontinence it stops as soon as the pressure decreases.[12] It is important to distinguish these two groups of patients because reconstructive surgery is only helpful in those with true stress incontinence.[13,14] Urodynamic evaluation, including cystometrogram and urethral pressure profiles are frequently helpful in making this distinction.[15]

Other diagnostic tools useful in confirming the presence of true stress incontinence include the vesical neck elevation test and the bead-chain cystogram. In the vesical neck elevation test, the patient is placed in lithotomy position with a full bladder; incontinence should occur with valsalva if stress incontinence is present. The examiner then inserts the second and third fingers into the anterior vagina, each lateral to the urethra. Elevation and support of the bladder neck by the fingers inhibits urethral descent and prevents incontinence with valsalva. This test, with only occasional exceptions, is highly reliable in confirming the presence of true stress incontinence.[16]

The most definitive of all diagnostic measures is said to be the metallic bead chain urethrocystogram. In this procedure, a metallic chain in the urethra allows radiographic demonstration of the anatomic relationship between the urethra and bladder neck. According to many, routine use of the bead chain urethrocystogram makes possible the distinction between the various abnormalities of urethrovesical anatomy and enables selection of the operative procedure most likely to be successful.[17,18] However, it should be noted that not all authors feel that bead chain urethrocystography is useful. They cite studies which demonstrate frequent interobserver variability in interpretation and the inability of the bead chain cystourethrogram to distinguish between stress incontinence and detrus instability in 19% to 54% of cases.[19]

Most authors recommend a trial of drug therapy pri to considering surgery for stress incontinenc Sympathomimetic agents such as phenylpropanolami and ephedrine will cause contraction of urethr sphincter smooth muscle. Two-thirds of women will improved by such treatment and approximately 25% w be cured.[20] The pharmacologic action of beta adrenerg blocking drugs, which inhibit sphincter relaxatio suggests that they may also be useful.

Hormonal supplementation has also been use Seventy percent of women who have no associat cystocele or uterine prolapse will experience in provement in symptoms of stress incontinence wh receiving daily oral doses of estrogen. Progestation drugs are not effective.[21] The basis for this improveme is not clear but the benefits of such treatments must weighed against possible adverse effects of estrog therapy e.g., uterine carcinoma.[22]

Faradism is widely used in Europe for the treatment stress incontinence. Small bipolar electrode plugs a inserted into the vagina and contraction of the pelv floor musculature is electrically induced. An anal pl electrode can be used when vaginal stimulation is n possible (uterine prolapse, intact hymen, etc.).[23] On half of patients with stress incontinence will improved by these techniques.[23]

Nonetheless, for most properly selected patient surgery remains the treatment of choice and succe rates in excess of 90% can be expected. However, discussion of the surgical management of this problem beyond the scope of this paper.[25]

Central Nervous System Depression

Reversible causes of central nervous syste depression may also cause incontinence on a transie basis. In these situations, incontinence is due impaired function of those brainstem and cerebr centers responsible for inhibiting micturition. Acut confusional states due to hypoxic conditions or diffus metabolic or toxic encephalopathies are responsible f much of the incontinence seen on an acute medic ward. Drug induced depression of micturition control also seen commonly, related both to therapeutic an toxic doses of sedative hypotic drugs such as th benzodiazepines or barbiturates. All of these causes incontinence are potentially reversible upon removal the offending drug or treatment of the acute medic illness.[26-28]

Impaired Mobility

It is often forgotten that impaired patient mobility ca lead to urinary incontinence.[3] This is commonly seen i the hospital as a result of acute medical illness, but ma also occur in the community due to causes such a arthropathy, foot trouble, paralysis, and disorders balance and vision. In many of these conditions, th incontinence may disappear with treatment of th underlying disorder or if appropriate bathroo arrangements can be made.[29]

rug Side Effects

A sixth and very important cause of transient ncontinence is the inadvertent pharmacological effect f certain drugs on the detrusor or urethral sphincter echanisms. Drugs which antagonize alpha adrenergic ction can cause sphincter relaxation and incontinence; hentolamine is best known for this property. Recent eports suggest that the antihypertensive drug, prazosin, an also have this effect.[30] Medications with antiholinergic properties can inhibit the action of the etrusor muscle and cause acute urinary retention with verflow incontinence. A host of agents have the otential to do this but tricyclic antidepressants, henothiazines, and drugs used for their gastrointestinal nticholinergic properties e.g., propantheline are most ften cited.[31,32]

Pharmacologic or endogenous substances which ncrease urine production can cause incontinence in ertain patients, especially those with impaired mobility. harmacologic agents include various diuretics (furoemide, thiazides, etc.) or osmotically active agents such s mannitol or urea. Incontinence can also be seen in bnormal metabolic states in which osmotically active gents are present in the blood, such as hyperglycemia r hypercalcemia. In such cases, urinary incontinence nay be an indication of an underlying systemic illness.

sychiatric Illness

Finally, occasional patients will be incontinent due to sychiatric illness. Proposed mechanisms include egression, rebellion, the need for dependency, and ttention seeking. Any of these processes may operate in ne setting of social isolation due to acute or chronic lness. It is important to recognize, however, that sychological factors are rarely the cause of urinary ncontinence.

Incontinent patients do, at times, elicit reactions from ospital staff that raise suspicions that psychological nechanisms are active, but their abnormal behaviors are enerally the result, rather than the cause, of their ncontinence. Incontinent patients experience a remendous loss of self esteem; they may become epressed, insecure and apathetic. Recognition of these ctors will enable the physician and staff to understand ne sometimes unusual affects of the patient with urinary ncontinence.[33]

onclusions

A significant percentage of geriatric patients are ncontinent of urine and in many cases, the cause is eversible. Because of the important social and psychoogic ramifications of this problem, it is important that ne physician carefully investigate every incontinent atient for reversible etiologies. Simple measures nvolving history, physical examination, and basic boratory tests can identify most of the reversible onditions.

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Neurology

Management Protocol for Head Injured Patients at the Barrow Neurologic Institute

Alan R. Murphy, M.D.
Timothy R. Harrington, M.D.

Editors:
James L. Frey, M.D.
Barry Hendin, M.D.
Lawrence Z. Stern, M.D.

Introduction

Accidental injuries are the most common cause of death in the first four decades of life. Among those involved in accidential injury, head trauma is one of the most important causes of death and disability. In the United States the yearly incidence of head injuries in the population is 200/100,000.[1]

Since the early 1970s, there has been a resurgence in the clinical evaluation and management of head injuries on a national and international level.[2-4] This renewed interest has resulted in refinement in the triage and treatment modalities of the head injured patient at the Barrow Neurologic Institute and other neurological centers.

Theory

There are two separate but related events following head trauma which leads to cerebral injury.[5] The primary injury is due to the biomechanical effects of trauma which results in cerebral contusions, lacerations, hematomas, and white shear injuries. When damage is extensive, death or severe disability often results. However, with lesser degrees of injury and injury in younger individuals, a good recovery is possible. Once the primary injury has occurred, events such as hypotension, hypoxia, hypercarbia, infection and intracranial hypertension due to brain swelling can le to a "second" head injury with resultant poor recovery and prognosis. This secondary insult is t component of cerebral injury which we feel preventable and treatable by aggressive patie management.

Glasgow Coma Scale		
Eye Opening	4	Spontaneous
	3	to speech
	2	to pain
	1	none
Best Verbal Response	5	Oriented
	4	Confused
	3	Inappropriate
	2	Incomprehensible
	1	None
Best Motor Response	6	Obeys commands
	5	Localizes pain
	4	Withdraws
	3	Flexion to pain
	2	Extension to pain
	1	None

Figure 1

In conjunction with other head injury centers, and an attempt to evaluate methods of treatment a monitoring, we have standardized our approach to t management of head injured patients. For the past fi years, we have used the Glasgow Coma Scale (GCS) a method of determining the severity of an injury. T coma scoring system was developed by Jennett a Teasdale[6] and is based on eye opening, verbal respons and motor response to stimulus. (Figure 1) Recently t long-term studies by Rimal and Jane[7,8] have led to the classification of head injuries into mild, moderate, a severe based on the GCS. In addition to the GCS, v have utilized the Gennarelli classification[9] which based not only on the severity of the injury, but on t type of lesion demonstrated by computeriz tomography.

These classification systems form the basis of o triage protocol for head injured patients, which dete mines subsequent evaluation and management. (Figu 2).

Severe Head Injuries—GCS3-7

Ideally, therapy begins at the scene of the accident a well-trained paramedic team with establishment of airway, stabilization of vital signs and expeditio transfer to a center staffed and equipped to treat t brain-injured patient.

Initial resuscitation at the medical center begins wi establishment of an airway, if not already done in t field, and supportive ventilation. In the severely hea injured patient, endotracheal intubation and ventilatio can prevent hypoxia, aspiration and development hypercarbia. Hypercarbia will result in cerebr vasodilitation which leads to further brain swelling a

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From: The Barrow Neurologic Institute, 222 West Thomas Road, Phoenix, Arizona 85013. Reprint requests to Timothy R. Harrington, M.D., Barrow Neurologic Institute, 222 West Thomas Road, Phoenix, Arizona 85013.

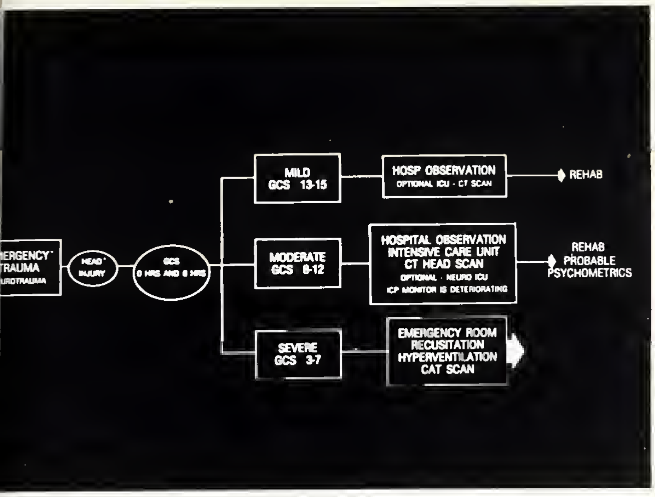

Figure 2

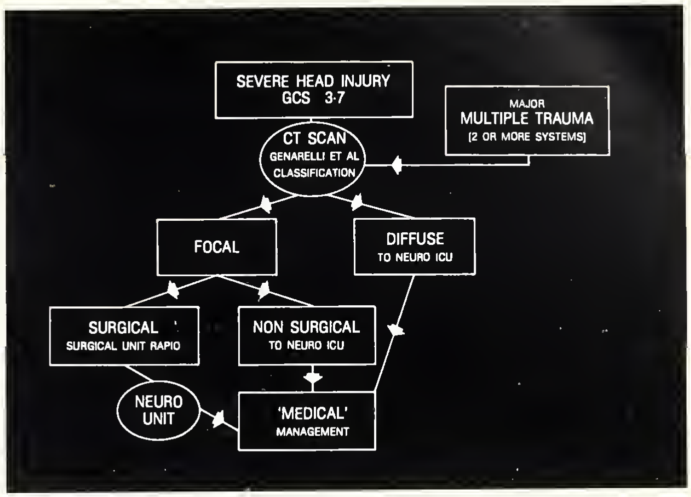

Figure 3

ised intracranial pressure. Intubation should be erformed by well-trained personnel to minimize ovement of the cervical spine. In ten percent of head-jured patients, especially if the injuries occur in motor hicle accidents, there will be an associated spinal jury.[10]

After the airway is established, attention should be rected towards maintaining the cerebral perfusion essure by careful management of the systolic blood essure. Ringer's lactate and plasma expanders are eferred to the use of dextrose and water which can ecrease serum osmolality and potentiate cerebral dema. In hypotensive patients and in patients with ultiple injuries, management of fluid restoration is ded greatly by use of a central venous line or a Swan-antz catheter.

The initial physical examination is important for etermining the extent and degree of injury and tablishing the baseline state for comparison to bsequent examination. The neurologic examination inimally must include the level of consciousness as easured by the GCS, pupillary size and reaction to ght, eye movements both spontaneous and in response oculovestibular or oculocephalic stimulus, corneal flexes, gag reflex, presence of spontaneous respir-ion, motor response, sensory response and reflex amination.

Many of these clinical findings have been demon-rated to be important prognostic indicators of utcome and need to be recorded on admission and in quential examination.[11-13]

While initial resuscitation and evaluation is being ndertaken, a laboratory trauma profile should be rawn which should include arterial blood gases, CBS, MA-20, blood alcohol and drug screen, and urine nalysis. Blood type for type and cross matching can also e drawn at this time if surgery is anticipated.

All severely head injured patients must have a omputerized tomogram of the head in addition to ervical spine and chest view. CT scanning will emonstrate focal lesions such as hematomas and contusions which may require emergency evacuation. CT scanning can also identify these patients at risk for developing intracranial hypertension.[14,15] Routine skull series and extremity views should not take precedence over CT in the severely head injured patient.

Patients at risk for developing intracranial hypertension and postoperative patients are then transported to a neurological intensive care unit for intracranial pressure monitoring with one of the available modalities. (Figure 3).

Among the severely head-injured group, it has been our experience that patients with GSC of three and four may have primary injuries of such severity that good recovery may be difficult to achieve with present treatment methods. The group in the GSC 5-7 category seem to be more amenable to our treatment protocols, especially the aggressive treatment of intracranial hypertension and maintenance of cerebral profusion pressure. This is the group of patients that we have had some success with the use of therapeutic pentobarbital coma.

Moderate Head Injuries—GCS 8-12

Approximately one quarter of head-injured patients will fall into the moderate head injured-group.[7] As with severely head-injured patients, the severity of the injury and subsequent outcome correlates well with GCS. These patients require the same assessment as those with severe injuries, including CT scanning for those with focal neurologic findings and depressed level of consciousness for one hour or greater. Up to ten percent of the patients with moderate head injuries will have a surgical lesion.[7] Generally these patients require observation and supportive care as the principal treatment modality. We feel these patients can be adequately managed at hospitals which have CT scanning, medical intensive care facilities and neurosurgical consultation available on a 24-hour basis.

Minor Head Injuries—GCS 13-15

The majority of head-injured patients will fall into this group, which is characterized by loss of consciousness for one hour and less with mimimal if any focal neurologic deficits. They primarily require a thorough neurologic examination with skull roentgenogram recommended for those with scalp hematomas, loss of consciousness greater than five minutes and clinical signs of fracture such as raccoon eyes, battle sign or hemotympanum. Obviously those with focal neurologic findings require CT scanning.

The majority of these patients will be admitted to the hospital for 48 hours or less and will require observation only. These patients can be managed at local hospitals with referral to centers with CT scanning and neurosurgical consultation if needed.

Conclusion

Head injury remains a significant public health problem due to its high morbidity and cost to society, and to the individual. The decrease in mortality from approximately 70% to less than 50% with early aggressive assessment and management indicates that we can make some inroads into this problem. Development of emergency services cognizant of the importance of the secondary brain injuries will further help diminish this associated morbidity.

We expect that early attention to the rehabilitation potential of these patients will further lead to a better outlook.

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Oncology

Medical Management of Pain in the Cancer Patient

Kathleen Fielder, M.D.

Editors:
David S. Alberts, M.D.
Ellen Chase, B.S.

Introduction

Fear of pain is an overriding concern of patients with cancer. Many believe that the diagnosis of cancer inevitably leads to a painful death. Incidence figures on the frequency and severity of cancer-related pain are not available, but several studies have shown that although significant pain occurs frequently, it is not a universal accompaniment of cancer. A study from Columbia Presbyterian Medical Center showed that only one quarter of cancer patients died without any pain or analgesic administration.[1] A recent study of 667 patients with cancer who self-rated their pain showed that, based on chart reviews, 17% of patients with nonmetastatic cancer and 56% of patients with metastatic cancer had pain secondary to their cancer. However, in comparison to self-rated pain in patients with nonmalignant chronic pain, the severity of pain reported by inpatients with metastatic carcinoma was comparable to that reported by arthritis patients and was less than that reported by patients with chronic stable pain of orthopedic or neurogenic origin. Nevertheless, the degree of interference with enjoyment of life and activity was found to be greater when the pain was caused by cancer than by other causes.[2]

From: University of Arizona, Cancer Center Division, Tucson, Arizona 85724.

Pain in the cancer patient is a complex problem. atients fear abandonment to a condition of unrelieved uffering, a situation compounded by physician rustration, which leads to a general nihilism towards the ncurable cancer patient. The management of the atient with cancer incorporates an effort to suppress or ure the underlying malignancy, but when this is no onger possible, emphasis is shifted to symptomatic ontrol to maximize the quality of remaining life which ncompasses comprehensive care of the patient's eeds—pharmacologic therapy as well as psychological, motional, social, and spiritual needs. This article rovides an overview to the pharmacologic nanagement of cancer-related pain.

tiology of Pain

Initial efforts must be made to identify the cause of ain. The optimal treatment is to eliminate the cause ather than to only suppress symptoms. The diagnostic vork-up will vary depending on the site and type of ain, status of the underlying malignancy, and general ondition of the patient. Often the first study indicated is plain x-ray. Bone scans may identify skeletal metastasis efore x-rays become positive, which requires a 50% lecalcification of bone. A myelogram to rule out cord or erve root compression may be necessary in the resence of spinal or radicular pain. Palliative surgery to elieve intestinal obstruction or radiation therapy for ony or brain metastasis may be indicated. Side effects rom the treatment of malignancy itself may cause pain. These include mucositis, chemical phlebitis, or drug eactions from chemotherapy or esophagitis, dermatitis, or enteritis from radiation.

New areas of pain research have been opened by the discovery of the opiate receptor and of endogenous opioid polypeptides in the central nervous system called endorphins. β-endorphin occurs naturally in the central nervous system (CNS) and is felt to be involved in the normal physiologic mechanism of pain perception. Alterations of this chemical may explain the analgesic effect of such modifiers as stress, hypnosis, placebos, acupuncture and counterirritants. Recent studies have looked at the administration of synthetic replicates of β-endorphin directly into the CNS, since this molecule, like most polypeptides, does not normally cross the blood-brain barrier. Oyama et al.,[10] found that intrathecal administration of β-endorphin produced remarkable analgesia in 14 out of 14 patients with intractable pain from disseminated cancer. Pain relief was profound and prolonged (mean duration, 33.4 hours; range, 22.5 to 73.5 hours) without significant side effects. Although repeated direct therapy is possible with an Ommaya reservoir, future developments will hopefully allow effective oral or parenteral treatment with endorphin-like substance that is free of the undesired properties of the narcotics.

Psychological Aspects of Pain

Pain is an objective phenomenon with considerable subjective emotional overtones which can be enhanced by psychological factors such as anxiety or depression. Pain, in and of itself, may not necessarily be severe, but the continuous existence or antipation of pain may be exhausting and contribute to depression. Often, assessment of sleep patterns can give an idea of the severity of the patient's pain. Chronic pain can cause severe anxiety, depression, or even frank psychosis in susceptible individuals, and evaluation of mental status is important. Psychiatric evaluation and the use of antidepressant drugs may be necessary and useful. Other useful modalities include relaxation, biofeedback, and hypnotic techniques.

Table 1
Commonly Employed Non-Narcotic Drugs

Analgesic	Oral Regimen	Comparison to Aspirin[13]
Aspirin	650 mg q 4-6 h	—
Acetaminophen	650 mg q 4-6 h	Equal analgesia but no antiinflammatory effect
Phenylbutazone	100 mg q 6-8 h	—
Indomethacin (Indocin®)	50 mg q 6-8 h	—
Fenoprofen (Nalfon®)	600 mg q 6 h	Better tolerated
Ibuprofen (Motrin®)	400 mg q 4-6 h	More effective and at least as well tolerated
Naproxen (Naprosyn®)	250 mg q 12 h	Longer duration of action
Tolmetin (Tolectin®)	400 mg q 6 h	—
Zomepirac (Zomax®)	100 mg q 4-6 h	More effective

Modified from Houde, RW[4].

Pharmacologic Management

General Principles

Analgesics are often not optimally utilized because of misinformation about their pharmacology. The number of analgesics is quite large. It is best to select a few agents, learn their pharmacologic characteristics in detail, and employ them in sequence according to their potency, formulation, onset and duration of effect, and potential for adverse reaction. Undertreatment of pain, seen even in patients with terminal malignancy,[3] can be psychologically damaging. A valuable approach is that a patient's chronic pain should be anticipated and abrogated rather than treated after it has appeared. Anxiety related to anticipation and memory of pain can be alleviated by giving medication prophylactically on a regular schedule rather than only when the patient requests it. Prophylaxis of pain can actually result in a decrease in the amount of analgesic required.

Non-Narcotic Analgesics

Mild pain can often be treated with adequate doses of aspirin, acetaminophen or non-steroidal anti-inflammatory agents. (See Table 1.) Although the non-steroidal anti-inflammatory agents (NSAID) are not considered safer than aspirin or acetaminophen, some are useful adjuncts for difficult-to-control musculoskeletal pain

Table 2
Drugs Commonly Used to Treat Severe Pain: Comparison to Morphine

Analgesic	Equivalent IM Dose (mg) to 10 mg IM Morphine	Equivalent Oral Dose (mg) to 10 mg IM Morphine	Duration (hr)	Comparison to Morphi
Morphine	10	60	4-5	—
Hydromorphone (Dilaudid®)	1.5	8	4.5	Shorter-acting narcoti agonist
Codeine	130	200	4-6	Good oral/IM potenc ratio; more toxic in hi doses
Oxycodone (Percodan®)	15	30	4-5	Shorter-acting narcoti agonist; good oral/I potency ratio
Methadone	10	20	8-12	Good oral/IM potenc ratio
Meperidine (Demerol®)	75	300	2-4	Similar, but more toxic chronic administratio
Pentazocine (Talwin®)	60	180	2-4	Shorter-acting; agonis antagonist with nalorphine-like propert

Modified from Houde RW[5]
IM = intramuscular

due to metastatic disease. These agents do not have the same range of efficacy as the narcotics, but adding them to narcotic therapy may substantially enhance the effect of the latter on visceral pain.

The main untoward side effects of aspirin and the NSAID are gastric irritation, prolongation of the bleeding time, and platelet inhibition. These side effects may be limiting for patients with advanced cancer who may be undergoing chemotherapy. In this setting, acetaminophen, which does not produce these adverse effects, may be the drug of choice, as it has comparable analgesic potency.

Narcotics

Management of more severe pain in the cancer patient will often require narcotic analgesics. The greatest difference among narcotics is their often unappreciated differences in duration of action, which can range from two hours with meperidine to eight to twelve hours with methadone. (See Table 2.) The increased duration of action of a medication such as methadone allows more freedom in daily activities and uninterrupted sleep since patients are not required to take medication as frequently.

Remarkable success has been reported with the use of Brompton's mixture for control of pain in terminally ill cancer patients. This oral narcotic mixture is given as a liquid for easy titration of dosage and is also easier to swallow for many patients with dysphagia. This mixture contains 10 mg of cocaine, a variable amount of morphine sulfate (ranging from 2 to 120 mg), 2.5 ml of 95% grain alcohol, flavoring syrup, and chloroform water for a total of 20 ml per dose. Doses are given every 4 hours, and the morphine is increased 2 to 5 mg every 48 to 72 hours until adequate analgesia is achieved. The mixture is usually given with a phenothiazine syrup to prevent nausea. However, in a controlled trial of 44 patients, there was no significant difference in pain drowsiness, confusion, or nausea between those patients given Bromptom's and those given morphine alone in a flavored aqueous solution.[14] Thus, I favo morphine sulfate solution over classical Brompton's solution because of its equal efficacy and fewer side effects.

Another important difference among narcotics is the variable oral-parenteral potency ratio which may require dose adjustment. For example, should a patient receiving Brompton's require a change to parenteral narcotics, the equivalent dose of morphine is half the oral dose in the Brompton mixture. Every attempt should be made to continue oral analgesics as long as possible to preserve the patient's independence before starting parenteral medications.

Side Effects of Narcotics

Narcotic analgesics can have significant side effects that the physician must be aware of. Respiratory depression is a constant feature of all the narcotics at equianalgesic doses. Sedation, mood alterations, and a lowering of the seizure threshold with convulsions may occur. Dysphorias are most common with codeine and pentazocine but usually disappear with equianalgesic doses of other narcotics. Nausea and vomiting may occur, requiring concomitant administration of an antiemetic. (See Table 3.) Constipation is a nearly universal side effect of narcotic analgesics which can be prevented by hydration, activity, and stool softeners. Change of narcotics in a dependent patient should be done carefully, as switching to a narcotic antagonist such as pentazocine can precipitate acute narcotic withdrawal. In general, the use of orally administered meperidine should be avoided because during "first pass" through the liver, a toxic metabolite is produced and the parent compound loses more than 50% of its

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Through more than 13 years of worldwide use, ibuprofen continues to demonstrate exceptional gastrointestinal tolerance vis-a-vis aspirin and other antiarthritic agents. In a recent series of double-blind trials of ibuprofen, naproxen and other NSAID's, only placebo was shown to produce less G.I. lesions than ibuprofen on gastroscopic examination.[5]

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"Any drug used in the control of the symptoms of the chronic arthritis must be tolerated for long periods without undue gastric discomfort...From this study it appears that ibuprofen is eminently suitable."[8]

Peptic ulceration and GI bleeding, sometimes severe, have been reported. Rufen® should be given under close supervision to patients with a history of upper GI tract disease.

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CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angio-edema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see WARNINGS).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration, perforation, or gastrointestinal bleeding can end fatally, however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease, and only after consulting the ADVERSE REACTIONS

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: *Coumarin-type anticoagulants* The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS. Rufen should not be taken during pregnancy nor by nursing mothers

ADVERSE REACTIONS: Incidence greater than 1%. Gastrointestinal: The most frequent adverse reaction is gastrointestinal (4 to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). Central Nervous System: dizziness*, headache, nervousness. Dermatologic: rash* (including maculopapular type), pruritus Special Senses. tinnitus. Metabolic: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS). *Incidence 3% to 9%.

Incidence less than 1 in 100. Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena Central Nervous System: depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma Dermatologic. vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome and alopecia *Special Senses.* hearing loss, amblyopia (blurred and/or diminished vision, scotomata and/or changes in color vision) (see PRECAUTIONS). Hematologic: neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura eosinophilia, decreases in hemoglobin and hematocrit. Cardiovascular: congestive heart failure in patients with marginal cardiac function, elevated blood pressure. Allergic: syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasms (see CONTRAINDICATIONS). Renal: acute renal failure in patients with preexisting significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. Miscellaneous: dry eyes and mouth, gingival ulcers, rhinitis.

Causal relationship unknown. Gastrointestinal: pancreatitis Central Nervous System paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri Dermatologic: toxic epidermal necrolysis, photoallergic skin reactions Special Senses: conjunctivitis, diplopia, optic neuritis. Hematologic bleeding episodes Allergic: serum sickness, lupus erythematosus syndrome, Henoch-Schonlein vasculitis. Endocrine gynecomastia, hypoglycemia Cardiovascular: arrhythmias (sinus tachycardia, bradycardia, and palpitations). Renal: renal papillary necrosis.

OVERDOSAGE: Acute overdosage, the stomach should be emptied Rufen is acidic and excreted in the urine, alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d

Dysmenorrhea: 400 mg every 4 hours as necessary

Mild to moderate pain 400 mg every 4 to 6 hours as necessary for the relief of pain. *Do not exceed 2,400 mg per day*

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Table 3
Frequently Employed Antiemetics

Antiemetic	Oral Dose (mg)	Rectal Dose (mg)	Parenteral Dose (mg)
ochlorperazine Compazine®)	10	25	5-10
iethylperazine Torecan®)	10	10	5-10
imethobenza-ide hydrochlor-e (Tigan®)	100	200	100
omethazine drochloride Phenergan®)	25	25-50	25-50

odified from Shimm DS, et al.[6]

ialgesic potency.

ther Additive Analgesics

Other medications such as tricyclic antidepressants, euroleptics, and sedative hyponotics may be beneficial conjunction with analgesics in the patient with ironic pain secondary to malignancy. The usefulness of ese non-analgesic drugs will depend on the patient's motional status since anxiety and depression are equently seen in these patients. Although these edications have never been shown to specifically nhance analgesic effect, they do have independent operties that can be used additively to deal with these companying problems.

Antipsychotic medications have many properties that ake them useful as an adjunct to analgesics. Careful se of small doses of the phenothiazines may be helpful calming an agitated patient or having an antiemetic fect. The antianxiety agents such as the benzo-azepines may have an important role to play in the atient with a strong anticipation-anxiety component ain or in the sleep-deprived patient. Tricyclic anti-epressants are felt to probably have an independent nalgesic effect as well as to improve mood through eir antidepressant effect.

eurosurgical Approaches

In this paper I have attempted to discuss the pharmacologic management of pain in cancer patients. Unfortunately, there is a small group of patients who continue to experience intractable pain or have unacceptable side effects from medical management (such as excessive sedation from high doses of narcotics) and who require neurosurgical intervention (see reference 7). The decision to proceed with an invasive neurosurgical technique must be based on the expected morbidity and mortality of the procedure as well as the patient's wishes and life expectancy.

Acknowledgements

The author thanks F. Meyskens, Jr., M.D., for helpful comments, and R. Markman and R. Collie for secretarial assistance.

Addendum

After submission of this article for publication, Zomax® was removed from the market by the manufacturer pending investigation of several cases of possible fatal toxicity.

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The Psychiatric Autopsy or The Defense of the Defenseless Defendant

Otto L. Bendheim, M.D.

Editor:
Thomas E. Bittker, M.D.

Not so long ago in one of the ancient cemeteries in New England, I found a rather weather beaten tombstone with the following epitaph, "Here lies Obadiah Smith, born 1688 in Salem, died 1752 in Deerfield," and then the simple sentence, "Oh Wanderer, wouldst Thou follow me." One of the pupils from the nearby school had scribbled underneath this in chalk, "To follow Thee I'd be content. Yet how do I know which way Thou went?"

I am afraid that if we could perform a psychiatric autopsy on Obadiah Smith, it isn't very likely that we could find out where he is residing now but we would learn a great deal about his history, his personality, his loves and hates, his ambitions and frustrations, his intelligence, his education. Possibly we could uncover a few secrets and a few skeletons in his closet.

What is a psychiatric autopsy? It is the postmortem examination of the psychiatric remains of the deceased. The structural anatomical remains, accessible at the traditional autopsy, only rarely permit any important conclusions regarding the personality of the deceased. A prime example is the autopsy of the University of Texas mass murderer, who shot and killed a lot of people at random from a tower on the campus. The post mortem revealed an unsuspected brain tumor but to this day, there is uncertainty regarding any possible cause and effect relationship of this finding and his acts of violence.

By definition, the psychiatric autopsy is the discovery, collection and analysis of all data, documents written by or pertaining to the deceased, such as letters, diaries, business papers, contracts and wills, suicide notes, poems, stories or school papers he may have written transcripts of court proceedings, depositions, etc., bu even more important, recollections about him from most everybody with whom he had come in contact, so called oral history, and of course all genetics, medical psychiatric, pharmacological and toxicological reports including an analysis of the events which led to hi death.

In a way every good biography is a psychiatric autopsy and recently the term, psychohistory, has been coined to describe the type of biography which interpret historical, literary or artistic documents in the light o psychological concepts.

Psychiatric autopsies can be misused. Once in a while we read stories of people being buried alive and o autopsies being performed on bodies which are no quite dead yet. Senator Goldwater had the gruesome experience of being analyzed during his presidentia campaign by irresponsible and incompetent psychiatrists, who drew the most absurd conclusions from totally insufficient evidence, published by a man later convicted of pornography. That particular misdeed was severely censured by the American Psychiatric

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From: 5051 North 34th Street, Phoenix, Arizona 85018.

ssociation. Another glaring example occurred during ie Alger Hiss trial, when a psychiatrist simply observed /hittaker Chambers in the courtroom, never talked to im, but made a wild diagnosis which happened to lease the adversary party, who had retained him.

Whenever a new psychiatric term arises on the orizon, the medical and legal professions are well dvised to use a little more than the usual caution. We all now what havoc has been caused in and out of court by ıch terms as traumatic neurosis, temporary insanity, ıultiple personality, psychotic episodes and many thers. Whenever one of these new concepts is roposed, it is apparently eagerly taken up by a small umber of defense lawyers, aided and abetted by ertain physician-psychiatrists, who travel throughout ıese United States selling their wares not unlike the eddlers of panaceas.

Autopsies are performed only postmortem and that oplies equally to psychiatric autopsies, but while the athologist usually has the advantage over the clinician f the last word and very definitive findings, the sychiatrist dealing with a dead person is deprived of his ıost important tool, the face-to-face examination and bservation of a live patient, who responds to inner and uter forces, and, interacting with the examiner, ıanifests emotions, intellect and judgment.

But not all is lost. It is just possible that in a number of ases the notorious Battle of the Experts, contradictory psychiatric testimony so damaging to the public image of psychiatrist, is avoided: the diagnosis is based on fixed, documented, reproducible evidence. Psychiatrists disagree in court because they see the examinee at different times, under different circumstances, under the influence of more or less mind-altering medication, and evoking in him different responses, different transference reactions. (Let us benevolently remain silent about those whose opinions can be purchased.) The spoken word, the non-verbal communication, the gesture and innuendo are certainly more subject to different interpretations than documentary evidence or facts revealed by witnesses under oath.

Psychiatry is one of the prime examples of an inexact, so-called soft science. There is evidence to suggest that the psychiatric autopsy corrects this situation to some extent because it removes the interpersonal vagueness between psychiatrists and examinees. Of course the reliability of the source, the possibility of self-serving accounts by interested parties, the fallacies of remote or selective memories must be weighed.

But if the preponderance of the evidence goes all in one direction, if all the little stones fall into place and make a plausible mosiac, a correct diagnosis is possible with remarkably little disagreement of the experts.

Very briefly, there are three main *medical* applications of the psychiatric autopsy:

1. The study of suicides with the objective of

understanding motives and developing prophylactic measures;

2. The study of a deceased friend or family member in order to help in the therapy of the mourning survivors, often a widow or widower, who can be relieved of otherwise unsurmountable feelings of guilt, loneliness or pathological grief;

3. And finally the postmortem study of famous or infamous personalities, geniuses, debased criminals, political figures, hijackers, traitors, spies, terrorists, etc., all in an attempt to find out what genes or circumstances may have been responsible for the end result.

(The psychiatric autopsy is not to be confused with the "psychiatric profile" of an unknown criminal. What kind of person laced the Tylenol capsules with cyanide?)

The main impetus and the development of an applicable psychiatric technique came from the Suicide Prevention Center in Los Angeles County where routine psychological autopsies have been performed on all suicide victims.

Legal Application

Legal applications of psychiatric autopsies are not nearly as well-defined and worked out. Since there is hardly anything in the literature, I must ask your forbearance if I base my remarks mainly on personal experiences. I am very much indebted to several members of the Arizona Bar for the opportunity and stimulus for this research: Charles Thomas, Jr.; The Honorable Richard Kleindienst, former Attorney General of the United States; and the Honorable A. Melvin McDonald, former Judge of the Superior Court in Arizona, now United States Attorney for the District of Arizona.

1. Testamentary Capacity

Perhaps the best known legal application is in the study of testators. For the determination of testamentary capacity, it is necessary to prove that the testator knew that he was writing his will, knew the nature and extent of his bounty, and the natural object of his bounty. The usual stumbling block of attempting to prove incompetence is the monkey wrench of the "lucid interval." It is not enough for the expert to state that the testator was mentally incompetent for a long period of time but he must also state that he was incompetent at *all* times and could not have possibly been competent at the time he signed the will.

2. Tort

Another area is, I believe, much more unique and as far as I know without precedent. These are tort cases where the question of wrongful death is raised. Was this death a direct result of a wrong? Was this suicide an irresistible impulse following a chain of events which could give rise to a tort claim?

3. Application in Criminal Cases

Still more unusual is the application in criminal cases. I very much appreciate the tireless and innovative efforts of Mr. Charles Thomas, Jr., of Mesa, Arizona, for bringing to my attention the case of a young woman who had just shot and killed her husband. Since the victim had made serious threats against the defendant and their sons, the possibility of so-called temporary insanity of the defendant had to be considered. After very careful and prolonged study over several months, I could not come to a definitive conclusion regarding this point but the more I studied the case, the clearer it became that the victim had precipitated his own death. A very careful psychiatric autopsy performed on the victim revealed through the review of several hospital records, the testimony of physicians who had examined both the victim and the defendant, the testimony of many friends, neighbors and acquaintances, that this man subjected his wife to the most unspeakable indignities, tortures and threats, almost unheard of physical and sexual abuse, details of which would make even Havelock Ellis and Krafft-Ebing blush. Finally, he threatened to kill his two sons, whom he suddenly considered to be bastards and not his own children. At that point his wife shot him to death.

This was the first homicide trial that I ever participated in where the questioning of the psychiatric experts emphasized not the mental condition of the defendant but the mental condition of the victim. I was reminded of a famous book written about fifty years ago by an Austrian author, *Not the Murderer, but the Murdered is Guilty*. To me as a layman, it appeared that the table was turned: it wasn't the defendant who was on trial but the victim. Without a psychiatric autopsy, I doubt that the victim could have been diagnosed a sexual psychopath with a terminal paranoid-psychotic episode, which made it very plausible that the defendant acted in self-defense, having every reason to feel subjectively to be in immediate danger of life or great bodily harm for herself and her children, and objectively reacting like any reasonable person would react under similar dreadfu circumstances, having a reasonable fear and taking reasonable measures to relieve her situation and save the lives of her children.

The outcome? Since the defendant had threatened to kill her husband on several occasions and had broadcast this threat to her neighbors; since she had inquired about his life insurance in case of his death; since she had been target practicing, "it looked like an ice cold case of first degree murder," as the *Wall Street Journa* (July 23, 1980) quoted the Presiding Judge A. Melvin McDonald. But the defendant was convicted of voluntary manslaughter and was paroled after serving two years of a five- to six-year sentence.

To quote Judge McDonald, "The psychiatric autopsy helps the jury to understand what the defendant has gone through. I believe it will be the trend of the future as more battered wife cases come to court. The psychiatric autopsy enlarges the classical self-defense You can look at the victim's entire life rather than just the day of the crime."

This case became rather famous and soon I had the opportunity to perform a psychiatric autopsy on the victim of a shooting. This person, a well-known alcoholic, with tendencies toward extreme belligerence, violence, combativeness and dangerousness, was bent on raping his ex-wife by breaking down, with a ack hammer, the door of the car in which she had ocked herself. When the woman's 20-year-old son appeared on the scene, the wife batterer threatened him and lunged at him. At that point the young man shot his ex-stepfather and killed him.

In this instance the psychiatric autopsy revealed that his man had sent his little stepdaughter to the hospital vith a very serious fracture of the larynx, an act of extreme cruelty almost resulting in her death. On other occasions he had to be tied down at his place of work because his fellow workers were scared to death of his age and violence. His usual hangout had been an American Legion Club, although he was not a veteran. There he had demanded, under threats, to obtain liquor during hours when the bar was legally closed, and had to be forcefully restrained by many people.

After the jury listened to all that, they came up with a verdict of "not guilty." The State had asked for a first degree murder conviction.

There were several other cases of psychiatric autopsies used in the defense of defendants whose cases looked otherwise rather desperate. The most recent one occurred only a few months ago when a young woman ound herself charged with first degree murder after shooting her husband to death. This man's life history eads like a textbook description of an antisocial personality disorder. He had met his future wife when she was about 15 years of age, had taught her all the fine points of drug abuse and prostitution, and had repeatedly forced her into "lockup joints," houses of prostitution where the girls were forced to remain for wo weeks without seeing anybody, without telephone contact and under threat of dire consequences. During hese periods as well as on other occasions she had to have intercourse with 20 to 40 customers in a 12-hour period, resulting in serious vaginal pain and contusion. Once she acquired gonorrhea. On the other hand, she would go home after these two-week periods with 52,000 in earnings.

The gentlemen had enjoyed wife beating and had ndulged in rather bizarre abuses, sexual perversions and a great number of debased criminal activities.

After interviewing numerous witnesses, family members, and "business partners" of the deceased, I was able to present him as a dangerous, violent, aggressive, assaultive, criminal bully, drug dealer, child molester, wife batterer, pimp, without any sensitivity or human awareness, utterly selfish, a cheat, a fraud, a bigamist, without loyalty and integrity. He was courting disaster and was asking in many different ways to be destroyed by one of the innumerable victims of his sadistic, cruel and immoral conduct. He was capable of almost any crime imaginable, including the most heinous and depraved ones. The defendant, his wife, had every right and reason to be terribly afraid for her safety and sanity and for her very life, especially since her attempts to rid herself of him were so unsuccessful.

In this instance, the Public Defender, Mr. Patrick O'Neil, said "The sentence of 5.25 years (which means somewhere between eight and twenty-three months) was the minimum. Prior to the testimony (the psychiatric autopsy) Judge Gerber had indicated to me that he was planning on a higher sentence."

Common Denominator

In these three cases as well as in about six others, the defendant had committed homicide under circumstance of extreme provocation. Without the psychiatric autopsy, the urgency of self-defense would have been much less evident. The dangerousness of the victim had to be proved without a doubt. The expert witness was limited by rules of evidence to cite only those incidents of violence, assaultiveness and paranoid behavior of the victim, which were known to the defendant and which contributed to the defendant's fear and his or her subjective need for self-defense. At the same time the psychiatric autopsy implied that under similar circumstances the average citizen may well have acted exactly like the defendants did.

Thus the fairy tales of temporary insanity, fugue states, psychotic episodes, rage reactions, etc., did not have to be employed. The dead victim was put in the defendant's chair and was proved to be the true criminal in these cases.

Admissibility

Obviously as a physician, I am not competent discuss the admissibility of the psychiatric autopsy. I sha quote from the paper, "Diagnosing the Dead: Th Admissibility of the Psychiatric Autopsy," by Davi Henry Lichter. (Source: *American Criminal Law Review* Volume 18, Spring 1981, No. 4, published by American Bar Association Section of Criminal Justice and Georgetown University Law Center.)

4. Conclusion

"The technique of the psychiatric autopsy, although relatively new, has contributed to a successful defense in all known cases in which it has been admitted. If defense counsel can frame the psychiatric autopsy as scientific evidence or as evidence concerning the reasonableness of defendant's belief of an imminent attack by the deceased, the psychiatric autopsy may be admitted. Once admitted, chances of a reduced verdict or acquittal appear to increase."

I believe that in competency cases regarding wills, contracts and testaments, the practice has been fairly well established. In tort cases and in the just-mentioned criminal cases, I can only say that whatever doubt I may have had about court procedure and about the adversary system was resolved when I observed the court, the prosecutor and defense counsel earnestly and conscientiously struggling with the problem of the admissibility of the psychiatric autopsy in arriving at the truth and establishing legal and psychiatric precedent.

In closing, I should like to quote an old saying, "Three may keep a secret if two are dead." Well, not quite; all three can be dead and yet the psychiatric autopsy may reveal the secret.

Radiology

Case of the Month
No. 65

David Fitzgerald
John K. Crowe, M.D.
Samuel McLinn, M.D.

Editors:
Jonathan M. Levy, M.D.
Janice Rice, M.D.

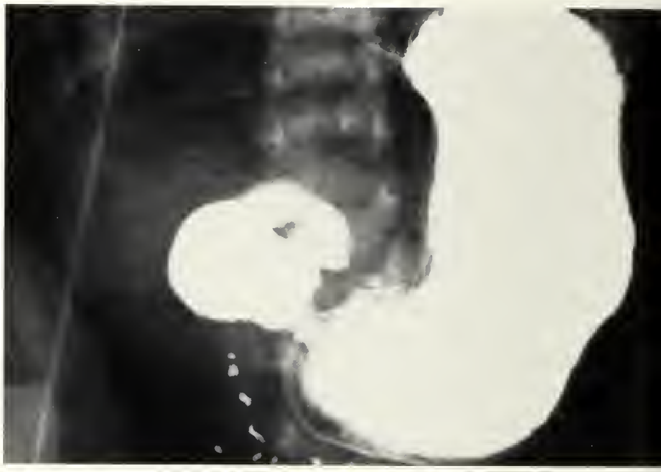

Figure 1A
Representative film from upper GI exam.

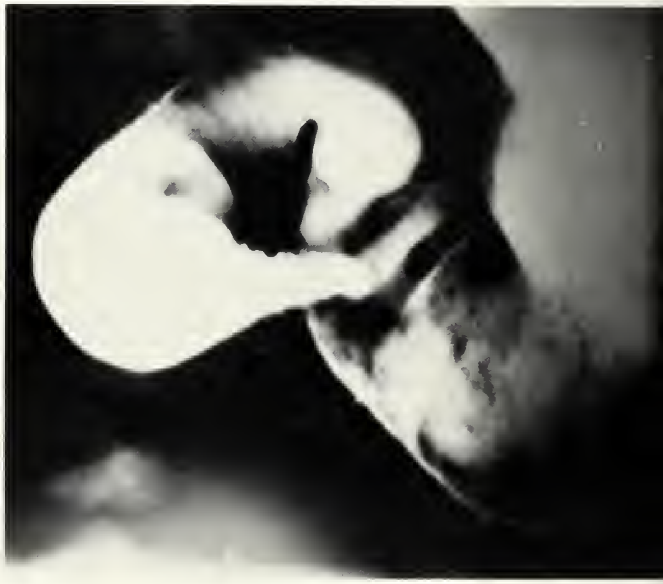

Figure 1B
Lateral film showing abnormality (arrows)

An 11-day-old boy was admitted to the hospital after five days of progressively increasing vomiting. An upper GI series was performed. (Figures 1A and 1B).

What is the abnormality?

What treatment should be instituted?

From: The University of Arizona School of Medicine (DF), and the Departments of Radiology (JKC) and Pediatrics (SM), Scottsdale Memorial Hospital, 7400 East Osborn Road, Scottsdale, Arizona 85241.

Continued on page 253

Special Articles

Hospice Care in Arizona

Debra Low, M.S.
Mary Ann Stutts, Ph.D.

Abstract

The purpose of the study was to examine awareness, attitudes, and adoption behavior of a sample of Arizona physicians, via a mail questionnaire, concerning the hospice concept. Findings suggest high awareness of the hospice concept among those Arizona physicians in the sample. Overall, attitudes toward hospice care were favorable, particularly regarding its ability to provide support mechanisms to patient and family. Thirty percent of the respondents reported they *had* referred a patient to a hospice program; eighty-eight percent said they *would* refer a patient to a hospice. Overall, findings suggest that physicians' attitudes toward hospice care in general, specific programs, and the characteristics of a program need to be examined by hospice managers prior to the development of their programs.

Key terms: Hospice concept; adoption; palliative care; terminal illness; holistic care; death and dying; health care marketing.

Introduction

An innovative health service that appears to have market potential is the hospice concept of care for the terminally ill. (Hospice is used as a singular, generic concept to include all existing models.[1]) Since its modern day resurgence in the last decade, the hospice concept has generated widespread interest and inquiry among growing segments of the U. S. population—most notably, physicians, nurses, social workers and other health care professionals, as well as the consuming public of health care services.

With its emphasis on palliative care rather than cure, the hospice concept has focused on providing

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From: Arizona State University. Debra Low, Center for Health Services Administration, Mary Ann Stutts, Department of Marketing, Southwest Texas State University San Marcos. Reprint request to Debra Low, Center for Health Services Administration, College of Business Administration, Arizona State University, Tempe, Arizona 85287.

Table 1
Attributes of Hospice Care Relative to Hospital and Nursing Home Care

Chart 1	Hospital	Nursing Home	Hospice-Inpatient
Problem	Acute illness	Chronic illness	Terminal illness
Outcome	Discharge to community or institution—97.5%; death—2.5%	Discharge to community or lower level of care—74.2%; or death—25.8%	Death; bereavement
Care given	Institutional: hospital	Institutional: nursing home	Home care with institutional back up
Care given by	Hierarchy of: physician, registered nurse, licensed practical nurse, nursing assistant, auxiliary personnel	Circle of: physician, registered nurse, licensed practical nurse, nursing assistant, auxilary personnel	Team of: physicians, nurses, soc workers, volunteers, clergy
Family involvement	Peripheral	Some involvement	Great involvement of family incorporated in giving care
Length of stay	7.3 days (1977)	84 days	Projected 10-12 days
Environment of institution	Sterile	Somewhat homelike but distinctly institutional	Homey, noninstitutional
Cost of Stay	$173.98/day (1977); about 50% of cost is for personnel	$24.04/day (1977); about 55% of cost is for personnel	Approximately $100/day (1977); more than 60% of cost is for personnel
Source of Data	(Health Care Financing Administration, Division of Hospital Services, U.S. Department of HEW)	(National Center for Health Statistics, United States Department of HEW)	(Hospice, Inc., New Haven Connecticut)

Source: Sara Burger, R.N.: Three Approaches to Patient Care: Hospice, Nursing Homes, Hospital, in *A Hospice Handbook: A Ne Way to Care for the Dying* Michael Hamilton and Helen Reid (eds) Willam B. Eerdmans Publishing Co., 1980, pp. 131-145.

specialized services designed to reduce pain and discomfort for terminally ill persons once the likelihood of effecting a cure is abandoned. Since the pioneering work of Dr. Cicely Saunders at St. Christopher's Hospice in Great Britian[2,3] the United States health care delivery system has begun to embrace much of the inherent wisdom and philosophy of the hospice concept. In response, a variety of hospice models have been developed, all designed to palliate the dying patient, to provide support systems to family members, and to accept the patient, family and other significants as the primary unit of care.

The introduction of the hospice concept in this country appears to be serving a need, satisfying a demand, and filling a void. An attribute that makes hospice care a unique and differentiated concept is its holistic orientation in addressing the familial, economic, psychological, social and spiritual needs of the dying patient and his family—in addition to his physical needs.[4] Yet another attribute that clearly differentiates hospice care from other health care services is its apparently lower cost. It is believed that its emphasis on home care services, and its extensive use of non-paid volunteers, has allowed hospice to be a less costly alternative to acute in-patient hospital care.[5-8] According to Cohen (1979) the matter of costs remains an unresolved issue;[9] however, because capital-intensive costs are less and ancillary services are kept at a minimum, overall costs per patient tend to be lower for hospice patients than for acute general hospital patients.[10]

Thus, hospice appears to be well-differentiated in terms of the services delivered, its holistic orientation, its apparently lower cost (than acute hospital care) and its emphasis on palliation. Hospice care also appears to be satisfying a consumer need-state that apparently has not been addressed by many hospitals and nursing homes (Table 1)

Services Offered by Arizona Hospices

Hospice care for the terminally ill is available to Arizona residents in metropolitan Phoenix, Mesa, Sun City, Tucson, Yuma, Lake Havasu City, Flagstaff and Prescott. Many of the programs are similar in their primary mission of providing a wide range of interdisciplinary health and social services to dying patients and their families, but differ in their deliver of these services.

Hospice of the Valley served 657 patient families in the Phoenix metropolitan area from 1978-1981. Delivering licensed home care services only, this hospice program relies primarily on a large volunteer sector that receives formalized training through classes offered by the hospice. Services provided include: nursing care, pain control, homemaker/home health aide, counseling, spiritual support, bereavement assistance, referral services and appropriate therapy. Hospice of the Valley also operates satellite programs in Sun City and Scottsdale.

Hospice-oriented services are also provided by the Oncology Life Enrichment Program at St. Joseph's Hospital in Phoenix. This program varies from Hospice of the Valley in its delivery of inpatient services as well as

Table 2
Marketing Concepts Applied to Hospice Care

unction	Service	Method of Gathering Data	Main Unit of Analysis	Suggested Area of Research
Marketing	Hospice Care	Focus groups; survey interviews; diaries; personal interviews	Individual consumers; physicians; family members; hospital staff; volunteers	Diffusion process; adoption process; opinion leadership in in diffusion; evaluative criteria; awareness and attitude measures

icensed home care. The Oncology Life Enrichment Program is intended to serve cancer patients, those whose diseases are in remission, as well as those diagnosed with terminal illnesses.

The East Valley Hospice Association was formally organized in January 1982 to serve residents living in the Valley east of Phoenix. Formerly a satellite of Hospice of the Valley, the East Valley Hospice Association provides a wide range of volunteer home care services to those in need. A trained volunteer force delivers hospice care to East Valley residents under the direction of the board of directors.

Tucson's St. Mary's Hospital assumed sponsorship of the St. Mary's Hospice program in 1981. The program, previously known as Hillhaven Hospice, merged with St. Mary's Hospital shortly after its grant from the National Cancer Institute expired. This program offers both in-patient and licensed home care services to Tucson area residents. A satellite program exists in Green Valley.

The Hospice of Yuma was recently incorporated and is operating as a volunteer home care program. This hospice program, like most others, relies on a large trained force of volunteers. Similarly, the Hospice of Prescott, Inc. is also a relatively new program. This hospice program also operates as a volunteer home care program as does the Hospice of Havasu and the Hospice of Coconino. The Hospice of Coconino is affiliated with the Coconino County Home Health Agency. Luke Air Force Base is also sponsoring a hospice program for those persons eligible to receive military health care benefits. The program provides volunteer home care to the terminally ill. Home care nursing services are provided when needed through appropriate agencies. The Luke hospice program is currently training volunteers to provide support services.

Marketing Concepts Applied to Hospice

Marketing has traditionally been used by profit-making organizations. Today, however, the concept of social marketing demonstrates that various healthcare delivery systems such as hospitals, nursing homes, and hospices are utilizing marketing concepts. Social marketing has been defined by Kotler and Zaltman (1971) as the design, implementation, and control of programs calculated to influence the acceptability of social ideas and involving consideration of product planning, pricing, communication, distribution, and marketing research.[11]

Where does marketing fit into the hospice program? According to Kotler and Levy (1969), marketing is that function of the organization that can keep in constant touch with the organization's consumers, research their needs, develop services that meet these needs, and build a program of services and communications to express the organization's purpose.[12] Marketing management, then, is the process of analysis, planning, implementation, and control of programs designed to effectively serve and communicate with specific target populations. The analysis and planning stages require consumer research to accurately define the target market, as well as the needs of this population. Without proper knowledge of the target audience, objectives and strategies cannot be formulated nor can effective marketing programs or marketing communication tools be developed. To date, hospice organizations appear to have focused primarily on implementation of the hospice concept with little emphasis placed on formal consumer research or on well-planned marketing communications programs. According to Breindel and O'Hare[13] the general populace lacks information on the hospice concept. They also feel there is evidence of physician resistance and/or a lack of knowledge about the hospice concept and its role within the health care system.

An application of marketing to the hospice concept can offer more effective communications as well as increased consumer awareness and acceptance of this health care innovation. To initiate marketing research into the hospice movement, various areas should be examined. (Table 2).

The Study*

The purpose of this pilot study was to examine the awareness, attitudes, and adoption behavior of a sample of Arizona physicians toward the hospice concept. Specifically, what levels of *awareness* of the hospice concept exist among physicians? Are attitudes toward hospice favorable or unfavorable among physicians? How strong are their *attitudes*, and how resistant are they to change? Once questions such as these are

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* Portions of the physician study reported here are contained in an article: Low, Debra, Richard F. Beltramini, and Mary Ann Stutts, "An Empirical Analysis of Variables Affecting the Adoption of Hospice Care by Physicians," *Journal of Health Care Marketing*, Vol. 2, No. 1, Winter, 1982.

researched, effective marketing programs can be developed that meet clearly defined objectives and strategies. *Adoption* refers to the mental and behavioral processes leading to the use of a new idea, practice or product by an individual. It consists of the various stages an individual moves through from total unawareness of an innovation to final acceptance and use of the innovation. The traditional hierarchical adoption model consists of five stages: awareness, interest, evaluation, trial, and adoption.[14] Deficiences in this model led to the development of an alternate model by Rogers and Shoemaker, labeled the "paradigm of the innovation-decision process." The new model consists of four stages: knowledge, persuasion, decision, and confirmation.[15] At what stage in the adoption of the hospice concept are physicians? Knowledge of what stage of adoption a particular segment (i.e., physicians) is in is necessary to develop effective communication programs designed for that particular population. For example, some health care consumers may only be at the "awareness" stage, while certain physicians may be at the "adoption" stage. Each requires a unique marketing strategy if the program is to be effective.

Sample

A total of 1,624 doctors of medicine, representing the in-state mailing list of the Arizona Medical Association, were selected from the following medical specialties: internal medicine, family practice, general practice and oncology. The specialties were selected by the reseachers based on pretest input from medical and health care professionals who indicated that these specific categories would be among those most likely to possess an interest in end-of-life care. Of these 1,624 physicians surveyed, 332 (20.4 percent) responses were obtained from the first mailing, and 118 (27.7 percent total) additional responses were added from a second mailing. The research instrument was a self-mailing questionnaire containing a variety of scaling, multiple choice, and open-ended questions. To enhance the response rate, a cover letter from the president of the Arizona Medical Association, Inc. was included.

Findings

Regarding awareness, 94.9 percent of Arizona physicians responding reported they have heard of the hospice concept. However, when asked how many other local physicians they felt were aware of hospice services, awareness levels were much lower. (Table 3) Only 11.8 percent of the physicians surveyed felt that 75 percent or more of other local physicians were aware of the hospice concept. These findings suggest that physicians consider themselves to be aware of the hospice concept, yet do not necessarily feel that "other" physicians are aware of the concept. The primary source of hospice information for individual physicians was professional journals. Other sources of personal information included newspapers, other physicians, television, magazines, professional seminars, hospital in-service, special mailings, and radio.

Table 3
Physicians' Feelings Toward Other Physicians' Awareness of Hospice

Awareness Categories		Percent of Sample Responding
100	Percent	1.5
75-99	Percent	10.3
50-74	Percent	25.0
25-49	Percent	25.3
0-24	Percent	37.9

The results indicate that 93.8 percent of respondents agree that the hospice concept appears to be a reasonable alternative to hospital care for some persons with a diagnosed terminal illness. Respondents' attitudes were investigated in greater depth via a series of statements in which respondents were asked to rate the importance of ten characteristics of hospice care. As indicated in Table 4, the emphasis on patient and family support ranks high among the most important characteristics of hospice.

Approximately 93 percent of respondents disagreed with the statement, "Hospital care may be inappropriate for some persons diagnosed with a terminal illness." Further investigation of this general perception was accomplished by having respondents compare hospital care to hospice care on eight rating scales. A consistent finding was the less positive attitude of physicians in private practice. These physicians felt that hospice care, compared to hospital care, is somewhat less effective, necessary, respectable, sensitive, and ethical. When asked why physicians do not refer patients to hospices, lack of awareness and lack of understanding were cited as primary reasons. (Table 5).

This seems to reinforce the idea that physicians do not believe that "other" physicians are aware of local hospice services or hospice in general.

Table 6 illustrates the reported effectiveness ranking of media vehicles for diffusing hospice information to other physicians. Interpersonal communication vehicles were ranked as most effective.

Regarding the actual adoption of the hospice concept, only 29.7 percent of the respondents indicated that they *had* ever referred a patient to a hospice program; 88.3 percent indicated that they *would* refer a patient to hospice; and 89.0 percent of those would continue referring eligible patients to a hospice program. (Table 7). Referral patterns would obviously be influenced by the local availability of hospice services in addition to attitudes held by physicians.

Conclusions

In considering those variables that affect the likelihood for adoption of an innovation, this study indicates that the first set—knowledge about the innovation—has been achieved, as more than 90 percent of the physicians surveyed indicate a familiarity with the hospice concept. However, as this study

Table 4
Importance of Characteristics of Hospice Care
(In Rank Order)

1. Emotional support of patient and family
2. Approach to pain control
3. Focus on family as the unit of care
4. Approach to symptoms management
5. Bereavement counseling
6. Emphasis on home care
7. Emphasis on palliative care
8. Spiritual support
9. Use of interdisciplinary team
10. Use of volunteers

Table 5
Why Physicians Do Not Refer Patients to Hospices
(In Rank Order)

1. Unaware of availability of local hospice services
2. Unaware of hospice care in general
3. Don't understand concept of hospice care
4. Perceive hospice care as less than appropriate than acute or long-term care
5. Are satisfied with hospitalizing terminally ill patients
6. Not interested in hospice care
7. Dislike hospice programs available locally
8. Believe hospice care is a fad that will soon disappear

Table 6
Media Vehicle Effectiveness
(In Rank Order)

1. Hospital in-service
2. Word of mouth
3. Special mailings
4. County medical society
5. Professional seminars
6. Professional journals
7. Television
8. Newspaper
9. Radio

Table 7
Utilization of Hospice

	Percent
Never referred a patient	29.7
Would refer a patient	88.3
Would continue referring	89.0

indicates, a high level of awareness does not ensure that adoption will take place. Knowledge about an innovation, such as hospice, does not guarantee a high regard for the innovation—nor its composite parts—among all physicians. Availability is also an issue.

Overall, attitudes among Arizona physicians toward hospice care were favorable. However, those variables contributing to physicians' attitudes should be considered in the development of a hospice program, and in communicating the attributes of such a program to the medical community. For example, physicians in general tended to evaluate hospice care favorably on its ability to provide support mechanisms to patient and family, yet they placed relatively less value on the role of volunteers or the team approach in providing care. Physicians' attitudes toward hospice care in general, specific programs, and the characteristics of a program need to be examined by hospice managers prior to the development of their programs. This is necessary in determining if the needs of the physicians' patients are being addressed adequately by the hospice program.

The purpose of this study was not to assess the rate of adoption of specific hospice programs in Arizona. Rather, it was to study the various steps in the adoption process regarding physicians' awareness, attitudes, media preferences, and intentions to utilize and adopt hospice care. Information of this nature may be of use to hospice managers when making managerial decisions regarding the effective planning of their programs to physicians. Only when management decisions are based on reliable research and planning can an innovation such as hospice be effectively diffused in the population.

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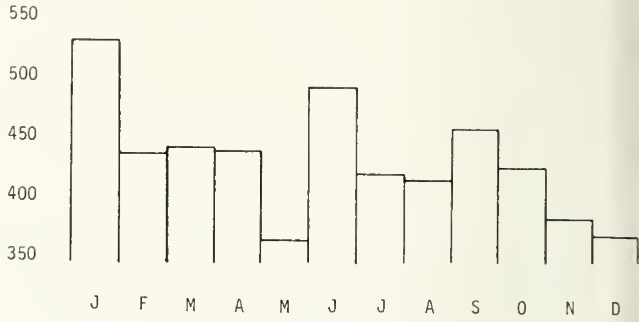
Seasonal Variations in Demand for Mental Health Services

Russ Christensen, M.S.

It is assumed by many that mental health is subject to seasonal fluctuations and that the patterns of variation are common knowledge. However, upon examination, many popular beliefs are found to lack an empirical base.

Phillips and Liu analyzed national suicide data and found a net decrease in suicide around holidays rather than an increase as popularly supposed.[1] Albin briefly traced the history of the popularization of the belief in the existence of "Christmas holiday blues." Her own study failed to support the widespread belief in the existence of Christmas blues and she also noted that national data indicates that December is the month with fewest suicides while April tends to be the highest.[2] Hillard and Buckman found that there have been at least 21 articles in the popular periodical literature during the past decade on "Christmas depression." However, their examination of medical literature revealed that no matter whether the criteria was "the number of suicides, number of psychiatric hospitalizations, number of psychiatric emergency room visits, number of outpatient psychiatric visits, or even the number of letters to advice columns December has almost always shown a relatively (compared to other months) low rather than high level of psychopathology."[3] And Christensen, in an investigation of midwinter depression in the North, found that contrary to the cabin fever concept admissions to community mental health centers in Alaska are lowest during the winter months (December, January and February).[4]

With the above in mind, walk-in admissions to the Southern Arizona Mental Health Center in Tucson for the three-year period 1979-1981 (N = 5,104) were analyzed using the chi square test of significance. Monthly variations were significant at the .001 level and the pattern from one year to the next was relatively consistent.



Figure

Southern Arizona Mental Health Center Walk-in Admission 1979-1981

There is a decrease in admissions during the spring, i contrast to the spring peak for suicides nationally. And would appear that the long, hot desert summers c Tucson does not drive people to seek counseling an more than do the long cold winters of Alaska.

Whatever the reasons for the variations in demand fc counseling services those who are sought out by othe for comfort, physicians as well as psychologists an psychiatrists, should be aware that mental healt complaints do not always occur when popularly supposed. The result of inaccurate popular wisdom may b the misdiagnosis of complaints. If depression is though to be common during a particular season complaints a that time may tend to be diagnosed as depression. I voiced at another time of year, symptoms of depressio may be overlooked as the effect of inaccurate popula belief subtlely shifts criteria for disorder identificatior

Those who counsel others, either informally o professionally, should be aware of the true patterns o mental health complaints/demands/needs in their specific communities which may differ from region tc region, as well as differing from the national pattern no to mention popular belief.

Acknowledgement

My thanks to Michael Berren, Ph.D. of the Southerr Arizona Mental Health Center for making the dat available to me.

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From: Presbyterian Medical Services, P.O. Box 3336, Farmington, NM 87499

adiology
nswer:
uodenal Obstruction Secondary Intestinal Malrotation

Congenital duodenal obstruction can be intrinsic atresia, stenosis or webs), extrinsic (malrotation with eritoneal bands) or both. In this case, the duodenal bstruction is the result of misplaced peritoneal eflections secondary to malrotation of the midgut. This ondition is second in frequency to duodenal atresia as a ause of congenital duodenal obstruction.

In normal prenatal development, the cecum rotates ounterclockwise around the superior mesenteric rtery. From its initial position below the stomach, the ecum moves to the right upper quadrant, then to the ight lower quadrant. The mesentery can then anchor rom the ligament of Treitz diagonally to the cecal area o form a stable mesenteric stalk.

In malrotation, the cecum fails to rotate to its normal osition in the right lower quadrant and attaches to the osterior abdomen with dense peritoneal bands (Ladd's ands). The bands often extend from the cecum over the uodenum to the liver and right paracolic gutter. These an result in partial or complete duodenal obstruction. Figure 2). The resulting mesenteric stalk is very narrow nd prone to midgut volvulus, which can lead to ntestinal infarction. Volvulus is present in more than alf the patients with a cecum in the right upper bdomen. Malrotation has been found to have a 33% mortality rate in the first week of life, if not promptly epaired. Thus, this condition demands prompt ecognition and surgical repair.

Eighty percent of patients with malrotation present linically in the first month of life. They may present with ither complete, partial or intermittent duodenal bstruction. Vomiting of bile stained material may occur hortly after birth or be delayed, as seen with ntermittent obstruction. Other signs are a distended abdomen, and sometimes visible peristalsis. Radiographically, air in the proximal duodenum and stomach may yield a "double bubble" sign on the upright film. Often the radiography is normal and the only sign is ntermittent bile emesis.

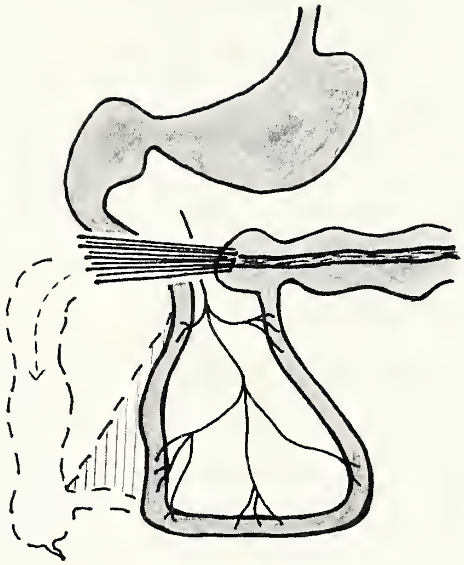

Figure 2

Representation of malrotation. Cecum has failed to move into its normal position (dotted lines), and Ladd's bands (multiple horizontal lines) obstruct duodenum.

All of the above findings are only specific for duodenal obstruction—they do not demonstrate malrotation. If any of the above findings are present and the patient is not having an immediate laparotomy, an emergency barium enema should be performed to rule out malrotation. Some radiologists prefer the upper GI series for its ease and its ability to show the site of the lesion, but in cases of intermittent obstruction, the lesion may be hard to detect. Barium enema may also give falsely negative results if the cecum is not properly demonstrated. Thus, although both barium enema and upper GI series are useful in the diagnosis of duodenal anomalies and malrotation, both have limitations. Furthermore, if malrotation is demonstrated, a careful search for associated intrinsic lesions, such as atresia, web or diaphragm, should be made.

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From the Bench to the Bedside:

Molecular Biology and Genetic Engineering

Increasing sophistication in biomedical research has recently produced dramatic advances in our understanding of various diseases and their treatment. A few of these "discoveries" have far-reaching implications and a brief review of three of them serves to reinforce the need for continuing education in the fields of genetics and molecular biology.

A recent article in *The New England Journal of Medicine*[1] has revealed for the first time the ability to manipulate human genetic material in vivo by biochemical means in order to alleviate a serious debilitating illness. Beta Thalassemia, a cause of severe anemia, is due to absent or diminished production of the B chain of the adult hemoglobin molecule (which usually has two B chains and two A chains). This results in excess A chains which precipitate inside the red blood cell and shorten its lifespan. The production within the bone marrow stem cells of another chain which could then combine with the A chains to form another hemoglobin molecule, could ameliorate this disorder. Such, has recently been accomplished with 5-Azacytidine. This drug stimulates G chain production, which is dormat in adults, so that fetal hemoglobin is synthesized (2 A+ 2G) which leads to increased red blood cell survival in patients with beta Thalassemia. Thus, for the first time, chemically manipulated genetic material within the chromosome has resulted in a temporary amelioration of a congenital disease. By "de-repressing" genetic material one can conceivably unleash selectively a broad spectrum of biochemical products. For instance, it may be quite feasible to treat a disease like diabetes mellitus by stimulating cells which normally do not produce insulin to begin synthesizing this polypeptide. Since all cells have the same genetic composition, but differ in their expression of this material, it is conceivable that one could stimulate, for instance, the gastrointestional tract to produce insulin. Although this may seem far-fetched, we are already aware of ectopic hormone production from sites not usually known to produce the hormone in question. This probably is nothing more than nature "de-repressing" genetic material. It stands to reason that similar manipulation of genetic material in a whole spectrum of diseases could occur resulting in more physiological therapy. This concept is exciting and offers new avenues for therapeutic investigation.

Biogenetic engineering has also enabled us to produce human hormonal material as well as chemicals from organisms not normally capable of doing so by transplanting other species genetic material within their nucleus and thus having them produce the chemical or hormone in question. Thus human DNA coded for insulin has now been transplanted into E. coli bacteria and human insulin has been harvested. Growth hormone has also been produced in such a fashion, as has interferon. "Humulin" (human insulin, Lilly) is now available for therapy in diabetes mellitus, and growth hormone is undergoing clinical trials by Genetech. The potential development of other compounds in this fashion is immense and should lead to novel applications.

With more sensitive investigation

tools, our understanding of other genetic disorders have also been enlightened and therapy proposed. The cause of familial hypercholesterolemia, a genetic disorder leading to early atherosclerotic vascular disease and high morbidity, has finally been unraveled by Drs. Goldstein and Brown.[2] They have shown that *serum* cholesterol (carried in low density lipoprotein [LDL]) is elevated because cellular receptors which take up LDL are not present in high enough amounts. It appears that there is a negative feedback system *within* cells which increases the number of cell LDL receptors when cholesterol levels *in cells* diminishes and decreases their amount when cholesterol levels inside rise. In this condition, something is amiss, resulting in low LDL receptors even though cholesterol levels inside the cells are low. This results in high levels of serum LDL (rich in cholesterol). By decreasing cholesterol synthesis further within cells, new drugs have been able to stimulate LDL cellular receptor production which has lowered serum LDL and thus cholesterol. It is also conceivable that genetic manipulation could also influence cellular LDL receptor concentration and result in a more efficacious cure for this devastating disease. Similarly, there are various forms of diabetes mellitus where the primary defect is not in insulin production, but rather in cellular response to insulin. Cellular receptors for insulin have been found to be decreased in various forms of diabetes, and it is conceivable that by genetic manipulation the disease could be treated in a fashion similar to that postulated above for familial hypercholesterolemia.

In summary, the explosion in our understanding of genetics and biomolecular biology has transported us rapidly from the laboratory to the bedside. In order to keep up with these dramatic advances, we're all going to need to keep current. Continuing medical education is mandatory in order to remain competent in the years ahead in the understanding and treatment of a wide array of medical conditions.

Marshall B. Block, M.D.
Editor

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Computers in Education

Effects of the computer and the information revolution are all around us. Microprocessing chips have endowed small and inexpensive computers with vast memory for facts and instructions, instantaneous information recall and processing, as well as the ability to present clearly visual and written representations of information. Devices using microprocessors are now performing varied functions in business, industry, research and education.

Educational applications, using large mainframe computers, are not new, but high costs, programming difficulty and access limitations have contributed to the stagnation of this form of instruction. Recently, inexpensive and easily programmed microcomputers for individual use have begun to exert an undeniable force on educational institutions. The educational capabilities of microcomputers appear to some as solutions in search of problems. The effective application of microcomputer technology in education generally, and in medical education specifically, will require a thoughtful matching of computer capabilities and persistent educational problems.

The need to remember, recall, and use an ever-increasing volume of complex information from the biomedical sciences is a frequently cited problem in medical education. The microcomputer offers students the ability to build electronic files of information and to store and recall that information instantaneously. Retrieval and sorting capabilities allow the student to review information that needs to be remembered and to form relationships among otherwise isolated facts and concepts.

A second problem in medical education is the dominance of the lecture for presenting course information to medical students. Interrelationships among facts, their weight in decision-making, and their place in problem-solving are difficult to instill when information is presented by the lecture method. However, information accessed through a computer, in patterns that are meaningful to the students, is more easily understood and remembered. Complex forms of information presentation, like simulations, that demonstrate relationships among facts, concepts, and procedures allow students to appreciate easily the subtleties of biophysical and psychosocial processes. The students' ability to solve problems and make decisions is also enhanced with computer-aids to retention and the understanding of relationships among pieces of information.

For decades medical educators and medical licensing and certifying agencies have relied upon the fact oriented, multiple choice examinations for most evaluations. This convention has caused a third persistent problem in medical education. Since evaluation of student learning is a determinant of what students study and then learn, students have emphasized factual, objective, conventionally testable material in their learning. For the student, the microcomputer can make available easy access to numerous test items for use in preparing for examinations through practice and review of course material. For the faculty the computer offers a low cost means of banking conventional test items, storing test statistics, and constructing effective examinations. New testing capabilities have also paralleled the introduction of microcomputing technology. The development and administration of clinical case studies, branching problem-solving sequences, and physiological simulations allows accurate testing of these higher levels of learning. Use of these sophisticated forms of examination will ultimately raise the level of student learning.

The use of microcomputers to address these and other persistent problems in medical education requires the support of the teaching faculty. The faculty clearly have an effect on the subject matter, instructional methods and means for student evaluation used in a college of medicine. The effect of their attention and effort does not end there. The faculty can promote and encourage needed educational innovations such as the application of microcomputers to medical education through their influence on curricular goals and the educational climate of a medical school. The Education Computer Applications Advisory Committee at the Health Sciences Center is a strong voice that evidences this influence in Arizona.

Robert F. Rubeck, Ph.D.
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University of Arizona
College of Medicine

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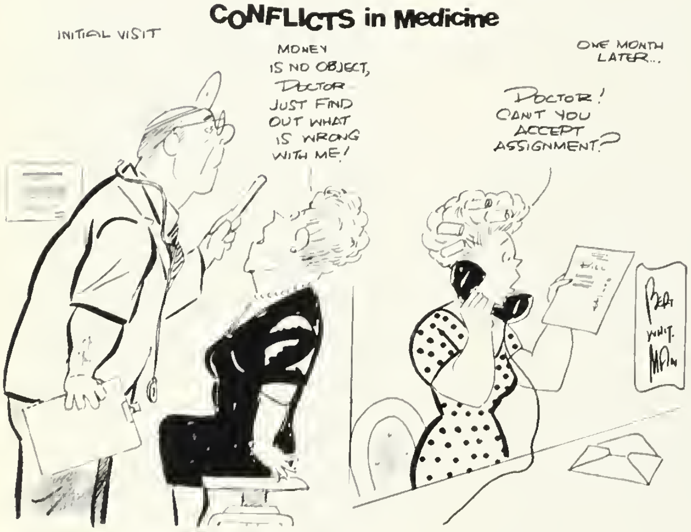
Cartoons

Arizona Medicine

In the last several issues of *Arizona Medicine* cartoons can be found near the editorial page entitled "Conflicts in Medicine." The ideas for these cartoons are derived from practical experiences and as such afford a rapid editorial comment. Inasmuch as many of our readers have experiences or points of view which they would like to express but find it difficult to put them into words, the editorial cartoon has certain advantages. Taken together with the fine artistic abilities of Mr. Burt Whitman, former editorial cartoonist for *The Phoenix Gazette*, thoughts come alive and can be succinctly presented. I would like to encourage our readers to submit cartoon ideas to the Editor for future use in *Arizona Medicine*. To date I take full responsibility for the cartoons which have appeared, and hope that others having different points of view will see fit to offer the words to which pictures can be drawn.

Marshall B. Block, M.D.
Editor


CONFLICTS in Medicine
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MONEY IS NO OBJECT, DOCTOR JUST FIND OUT WHAT IS WRONG WITH ME!
ONE MONTH LATER...
DOCTOR! CAN'T YOU ACCEPT ASSIGNMENT?
BILL

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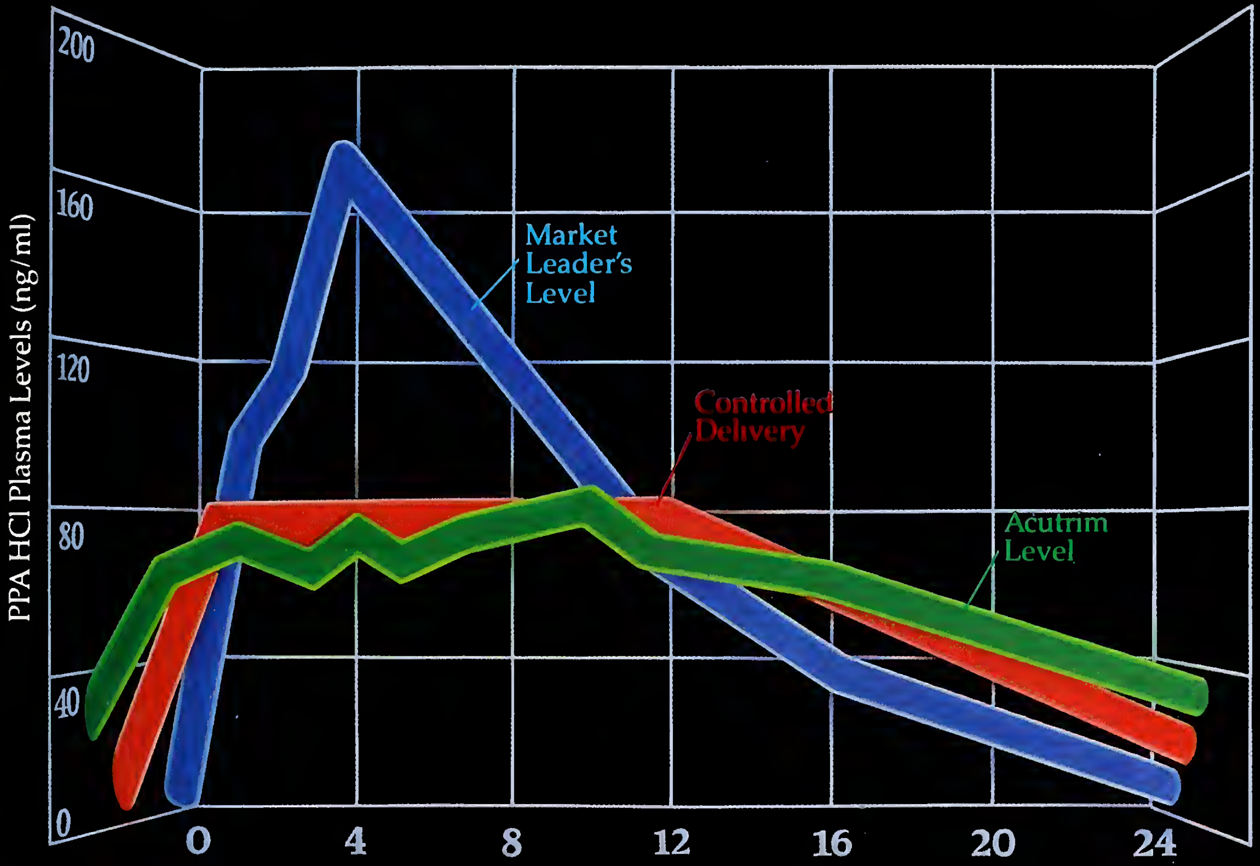

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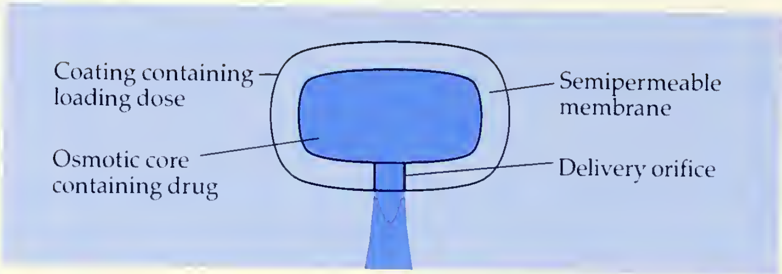

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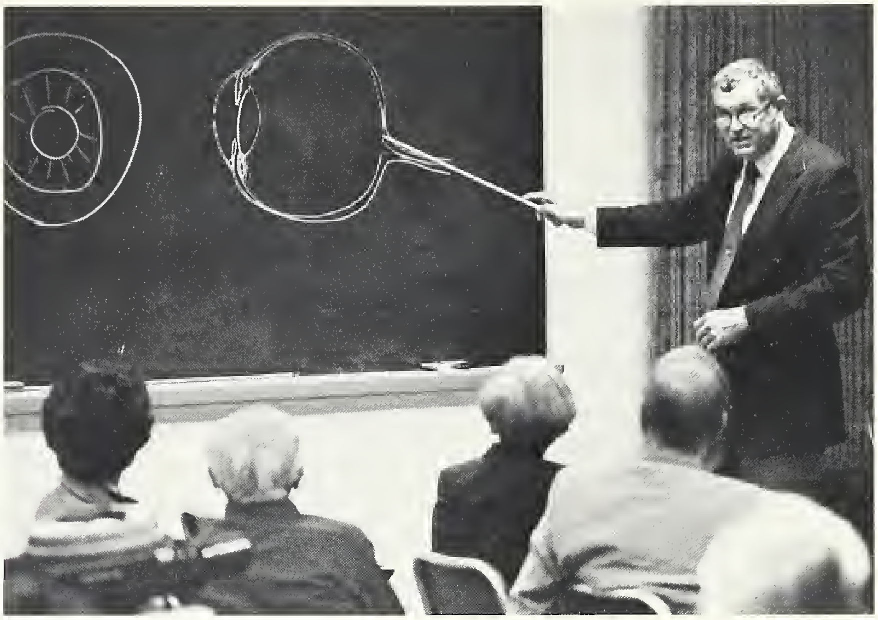
Briefly Noted


C. Truman Davis, M.D. diagrams the human eye at ArMA's Health Talk forum.

C. Truman Davis, M.D., Mesa, discussed recent technological advances n eye disease surgery and treatment at the January **Health Talk** cosponsored by the Arizona Medical Association and Blue Cross/Blue Shield of Arizona. The **Health Talk** series is held monthly at the ArMA Building to provide the public with accurate health nformation.

Coy Foster, M.D., former chairman of the ArMA Housestaff Section and member of the Governing Council of the Resident Physician Section of the American Medical Association recently claimed the world high altitude record for the AX-2 one-man hot air balloon. Dr. Foster, now in practice in Dallas, Texas, achieved an altitude of 12,950 feet above sea level. He has also broken four world records in an AX-3 hot air balloon. Dr. Foster says that the challenges of exploring the limits of ballooning—and himself—are "irresistible."

The **James M. Grobe, M.D.**, award from the Arizona Academy of Family Physicians was presented this year to **Jay A. Jamieson, M.D.**, a third year resident in the Family Practice Training Program at Good Samaritan Medical Center.

David L. Wallace, M.D., Tempe, has been named president of the 425-member medical staff at Desert Samaritan Hospital and Health Center.

Recent appointees to the Board of Trustees of St. Luke's Hospital include **Thomas A. Edwards, M.D., John Ricker, M.D., Charles M. Rucker, M.D.**, and **Edward L. Shaw, M.D.**, of Phoenix. **Ronald F. Hilding, M.D.**, Phoenix, was recently named to the Board of Trustees of St. Luke's Behavioral Health Services.

Serving on the faculty of the Tucson Medical Center's Health Information Series for 1983 are the following Pima County Medical Society members: **J. Steven Strong, M.D., John T. Boyer, M.D., Paul Bozzo, M.D.**, and **Harold C. Willingham, M.D.**

The Arizona Medical Association welcomes the following Physicians who recently became members:

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Family Practice
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No. 203-A, Scottsdale
University of North Dakota
School of Medicine—1977
William W. Horsley, M.D.
Diagnostic Radiology
3604 Wells Fargo, No. 3,
Scottsdale
University of Utah—1974
Steven G. Isaacs, M.D.
Emergency Medicine
7840 East Camelback Road,
No. 109, Scottsdale
University of Louisville—1980
Edmund I. Leff, M.D.
Colon and Rectal Surgery
2021 North Central, Phoenix
Tufts Medical College—1972
John F. Mardock, M.D.
Psychiatry
1111 East McDowell Road, Phoenix
University of Kansas—1959
Aubrey Maze, M.D.
Anesthesiology
and Pediatrics
217 East Virginia, Phoenix
Cape Town University—1970
Stephen W. Murphy, M.D.
Emergency Medicine
1111 East McDowell Road, Phoenix
New York University—1973
Michael Ogden, M.D.
Psychiatry
1033 East McDowell Road, Phoenix
Ohio State University—1957
Dennis K, Parkinson, M.D.
Pathology
Good Samaritan Hospital, Phoenix
George Washington University—1976
Patricia E. Perry, M.D.
Diagnostic Radiology
1111 East McDowell Road, Phoenix
St. Andrews University—1961
Alfredo C. Ramirez, M.D.
Family Practice
448 East Southern Avenue, Phoenix
University Autonoma de
Guadalajara, Mexico—1976
Donald L. Randall, M.D.
Pediatrics
4212 North 16th Street, Phoenix
University of Oklahoma
College of Medicine—1959
Vivian V. Reyes, M.D.
Anesthesiology
7703 West Wagoner, Peoria
University of Santo Tomas,
Manila, Philippines—1969
Seymour Rife, M.D.
Diagnostic Radiology
450 West Fifth Place, Mesa
University of Toronto—1968
Raul M. Rodelas, M.D.
Nephrology
13460 North 94th Drive,
No. 5-1, Peoria
University of the East,
Quezon City, Philippines—1972
George Rodman, M.D.
General Surgery
Good Samaritan Hospital, Phoenix
University of Kentucky—1970
Ian Rothwell, M.D.
Family Practice
6036 North 19th Avenue,
No. 509, Phoenix
University of Sydney—1975
James A. Schnur, M.D.
Radiology
Good Samaritan Hospital, Phoenix
Harvard Medical School—1965
Henry W. Schoeneck, M.D.
Obstetrics/Gynecology
1301 South Seventh Avenue, Phoenix
Syracuse University
College of Medicine—1947
Donald A. Schon, M.D.
Internal Medicine
and Nephrology
13000 North 103rd Avenue, Sun City
Yale University
School of Medicine—1973
Rodney K. Shotten, M.D.
General Practice
443 North Alma School Road, Mesa
Indiana State University—1975
Marshall Smith, M.D.
Obstetrics/Gynecology
2320 North Third Street, Phoenix
University of Texas—1975
John M. Stein, M.D.
General Surgery
Maricopa Medical Center, Phoenix
Harvard Medical School—1961
Borislav Stojic, M.D.
Orthopedics
1450 South Dobson Road, Mesa
Ludwig Maximilian University—1957
Richard A. Walsh, M.D.
Surgery
Maricopa Medical Center, Phoenix
New York University—1948
Pamela H. Williams, M.D.
Ophthalmology
5251 West Campbell Avenue, Phoenix
Columbia University College
of Physicians & Surgeons—1975
Gary Wilson, M.D.
Radiology
926 East McDowell Road, Phoenix
Marquette School of Medicine—1970
Hugh B. Woodward, M.D.
Internal Medicine and
Occupational Medicine
3033 North Third Street, Phoenix
Jefferson Medical College—1950
Mark Zachary, M.D.
Orthopedics
4550 North 51st Avenue, Phoenix
Cairo University—1976
Ronald Zmyslinski, M.D.
Cardiovascular Diseases
Mountain View Center, Paradise Vall
New York University
School of Medicine, New York—197

Mohave

M. Imtiaz Ahmed, M.D.
Obstetrics/Gynecology
2202 Stockton Hill Road,
No. C, Kingman
Nishten Medical College,
Multam, Pakistan—1970
David Mishkin, M.D.
Anesthesiology
1540 Norris Drive, No. Z,
Lake Havasu City
University of California at Irvine—196
Wanda J. Rygiel, M.D.
Pediatrics
1711 Mesquite Plaza, No. C,
Lake Havasu City
Goethe University,
Frankfurt/Main, West Germany
Witold W. Rygiel, M.D.
Plastic Surgery
1711 Mesquite Plaza, No. C,
Lake Havasu City
Warsaw Medical Academy, Poland—19

Affiliate Member

Max Newman, M.D.
11011 Middlecoff, Fountain Hills

Resident Member

John E. Boulet, Jr., M.D.
Maricopa Medical Center, Phoenix

Service Member

Mohammad Ali Habib, M.D.
Internal Medicine
7555 East Osborn Road, No. 107,
Scottsdale
University of Teheran

ighlights from the ArMA Board of Directors reception to encourage better ommunication between state legislators and physicians

rMA President John E. Oakley, M.D. with Senator John Hays, istrict 1 (L to R)

Speaker and Mrs. Frank Kelley talk with Dr. Scott Chisholm. Stan Turley, President of the Senate, in the background

Representative Bart Baker, Chairman of the House committee on Health and Aging, with Dr. Clyde W. Kurtz and Mrs. Baker (L to R)

Dr. Rudi Kirschner; Representative Pete Hershberger, District 2; and ArMA President-Elect Dr. Neopito Robles

Dr. Richard Zonis, Senator Anne Lindeman; ArMA Lobbyist Allan Stanton (L to R)

ArMA Reports

The minutes appearing in this section have been condensed. A complete copy of them will be sent to any member requesting one.

LEGISLATIVE COMMITTEE

A meeting of the Legislative Committee of the Arizona Medical Association, held on Saturday, January 15, 1983, at 810 West Bethany Home Road, Phoenix, convened at 12:45 p.m., Clyde W. Kurtz, M.D., Chairman, presiding.

Crippled Children's Services

Minutes of a subcommittee meeting of the Legislative Committee on Crippled Children's Services held on Wednesday, December 15, 1982, were distributed to each member. Richard O. Flynn, M.D., Chairman of the subcommittee, gave an overall summary of what took place at the meeting. A Department of Health Services' representative told the Committee that clean-up legislation will be introduced through the Joint Legislative Oversight AHCCCS Committee this session. Potential solutions to the Crippled Children's problem included a waiver by the feds, amendment to the AHCCCS bill and contracts with hospitals.

It was moved and seconded that an ongoing study of this issue was necessary and to continue, with a committee to be designated, to try to work with interested parties for a solution to the Crippled Children's problem.

Natural Healing Arts

Earl J. Baker, M.D. is ArMA's representative on the Legislature's Natural Healing Arts Commission. A report was given on the meetings held to date and results indicated very little activity at this point. Dr. Baker requested volunteer subcommittee members to advise ArMA on 1) acupuncture, 2) the general aspect of "massage" type physiotherapy, and 3) counselling. If so approved, a position paper could be prepared and approved by ArMA membership and submitted to the Natural Healing Arts Commission. Action on this issue will probably commence in February, 1983. (Copy of Dr. Baker's complete report on file with Master Minutes at ArMA)

Physician's Assistants

A discussion was held on the proposed changes in the Physician's Assistants statutes. It was pointed out that the current governing board, the Joint Board of Medical Examiners and Osteopathic Examiners, is quite large and meetings are held twice a year which does not seem to be adequate. A representative from BOMEX said they wanted to 1) make the Board smaller and have it meet more often, with BOMEX still administering the program, and 2) since Physician's Assistants regulations have been promulgated since 1974, they would like to take the regulations and codify them into law.

It was moved and seconded to encourage the Joint Board to set up subcommittees to handle the problem but the concept of a separate Physician's Assistants Board should be opposed.

Malpractice Issues

Minutes of the Ad Hoc Malpractice Insurance Crisis Committee meeting held on Wednesday, November 4, 1982, were distributed to all members of the Legislative Committee together with minutes of a MICA Legislative meeting on November 18, 1982. The Chairman of the Ad Hoc Malpractice Insurance Crisis Committee said the purpose of proposed legislation was to bring the problem to the legislative leadership to make them aware that malpractice problems are still around.

It was agreed to postpone discussion on legislation dealing with patient records until such time as Roger Kaufman, ArHA attorney, could address the Committee.

It was moved and seconded that we support the action of the Malpractice Insurance Crisis Committee in bringing to the Legislature the following items: periodic payment or schedule settlements, and percentage of contingency fees for their discussion and possible bill introduction.

Clinical Pharmacist Practitioners

The possibility of this bill appearing in the current session was brought up. It was noted that the Association actively opposed the bill last session.

It was moved and seconded that there be active non-support of legislation dealing with Clinical Pharmacist Practitioners.

Therapeutic Substitution

A representative from ArHA said that the information given the Committee was incorrectly drafted. He asked that the Committee wait until the next meeting at which time he would present a new draft.

Sodium Labeling

The Chairman announced that the data available on Sodium Labeling has been verified as to accuracy, etc., and we will go ahead and draft legislation on this subject.

ADHS Legislative Program

Dr. James Sarn, Director, Arizona Department of Health Services, gave a brief presentation of the budget for hi Department and distributed a list of propose legislation to the Committee.

Physician For The Day

The Chairman announced that guidelines had been prepared and ha been accepted by the leadership of th House and Senate. It was agreed that the program, especially as it relates to physician's liability, warranted serious study before next year's session.

Dr. Kurtz told the Committee that meetings will be held more frequently—possibly every two weeks.

NOMINATING COMMITTEE

The meeting of the Nominating Committee of the Arizona Medical Association, Inc. held on Saturday, January 15, 1983, at the offices of the Association at 810 West Bethany Home Road in Phoenix, Arizona convened at 10:12 a.m., Clyde W. Kurtz, M.D., Chairman, presiding.

Review of Bylaws

The committee first reviewed those sections of the Bylaws (Chapter V, Section 1 and Chapter VIII, Section 3) pertaining to elections and candidate selection.

Memberships

For their use in developing a slate o candidates, the committee received fo informational purposes a list, as of 1/15/83, of the Delegates and Alternat Delegates for the 1983 Annual Meeting as well as a list of members on ArMA's Board of Directors.

Terms of Secretary and Treasurer

In accordance with the 1982 bylaws change that "the Secretary and Treasurer shall be elected for a term o two years that shall not run concurrently, with the election of thes officers to occur in alternate years," th Chairman reminded the committee tha it had been instructed by the House of Delegates to apply that premise and determine which of those officers elected in 1982 would serve a two year term (1982-84) and which would serve one year term (1982-83). It was moved and carried that Richard L. Collins, M.D., the current secretary of the Association would be deemed to have been elected during 1982 for a two-year term (1982-84) and that, by reason of such determination, the office of Treasurer, currently held by Gary L. Henderson, M.D., would be deemed to have been for a one year term, creating a vacancy to be filled during the 1983 Annual Meeting for a two-year term (1983-85).

1983 Slate of Candidates

The committee received and discussed nominations from the membership for the various offices to be filled during the 1983 Annual eeting of the House of Delegates id, thereafter,

It was moved and carried to approve e 1983 slate of candidates for offices be filled during the May Annual eeting of the House of Delegates as t forth on Exhibit "A" (a copy of hibit "A" is available on request from rMA's office.)

mendment to Bylaws

The committee discussed at great ngth the restrictions of the existing laws (Chapter V, Section 1) relating those individuals which can be nsidered for nomination and, llowing a lengthy discussion,

It was moved and carried to ecommend to the Board of Directors at a bylaws resolution be introduced troduced during the 1983 Annual leeting which would amend Chapter , Section 1, to expand the group igible for nomination and election to clude alternate delegates to ArMA as ell as past presidents of county edical societies.

BOARD OF DIRECTORS

The Board of Directors met on January , 1983.

President of the ArMA Auxiliary, Mary ee Collins reported on the Auxiliary tivities.

The AMA Delegation reported on the 82 Interim Meeting. The Board was dvised that William C. Scott, M.D. has een requested and consented to be a andidate for the AMA Council on cientific Affairs and it was moved and rried that the Board of Directors of e Arizona Medical Association go on ecord as endorsing the candidacy of Villiam C. Scott, M.D., for a position n the AMA Council of Scientific ffairs and that ArMA financially upport Dr. Scott's campaign for such osition within budgetary restrictions.

Chairman of ArMPAC, Dr. Meredith eported to the Board on the final ontributions made to candidates uring 1982 and expressed the hope at membership in ArMPAC would ontinue to grow in the year ahead.

Dean of the College of Medicine, Dr. ettel reported to the Board on various ems of interest occurring at the ollege of Medicine including the udgets, progress being made in the ancer Center drive fund, and the atus on medical school admissions.

Mr. Robinson reported on various eeting of the Arizona Hospital ssociation Baord of Directors advising at the topics of discussion have been e *DeBoer* case, the Tumor Registry, ossible legislation to place a oratorium on hospital beds within the ate, and most in-depth and ongoing eporting on the activities under the HCCCS program.

The Board was apprised by the Benevolent and Loan Fund Committee of a bequest contained in the Last Will and Testament of Marie B. Mallory. It was moved and carried to approve the establishment of the fund which would result upon the death of Marie B. Mallory under the terms of her Last Will and Testament under the name of "The Marie B. Mallory Fund," with Alvin E. Larson, Esq. to serve as an advisor for the administration of said fund.

Following a report from Robert N. Tellier and Scott Sherwin of Scott, Tellier & Co., a Phoenix actuarial firm, and Bruce D. Pingree, Esq., a retirment and pension plan expert with the Firm of Snell & Wilmer, and lengthy discussion, it was moved and carried that the Arizona Medical Association create a retirement program committee, the membership of which shall be selected by the Executive Committee, to review ArMA's existing retirement program together with the proposal of Scott, Tellier & Co. relating to suggested changes in the program and make recommendation to the Board of Directors as to what course should be followed.

Following a review of a suggested policy statement regarding the requests for contributions from outside organizations, it was moved and carried that the following be submitted by the Board of Directors in resolution form to the House of Delegates during its May meeting for consideration as the Association's formal policy relating to requests for contributions from outside organizations:

"Whereas, The Arizona Medical Association is supported almost entirely from voluntary dues payments made by members that expect those funds to be used for programs initiated within the federation of organized medicine; and

"Whereas, if this concept is valid, it would then be inappropriate for those funds to be given to outside organizations; now, therefore be it

"Resolved, that the policy of the Arizona Medical Association is that it will not make contributions to organizations outside the federation of medicine (county societies, specialty societies, and the AMA); and further,

"Resolved, that it is understood that future Board of Directors' actions could alter this policy for exceptional circumstance."

It was moved and carried that the Arizona Medical Association support the reappointment of M. David Ben Asher, M.D. as a member of the Board of Medical Examiners and, additionally, to recommend to the Governor of the state of Arizona, Thomas E. Bittker, M.D. to fill the vacancy which would be created on the Board with the expiration of Dr. Albert Eckstein's term on July 1, 1983.

It was moved and carried that the following 1983 committee budgets be approved.

Following approval of the 1983 committee budgets, the Board reviewed the recommendation from the Finance Committee that a certain portion of the contingency fund be earmarked for additional activities of the Public Relations Committee, which recommendation was accompanied by a written document and oral presentation by Dr. George F. Brown setting forth in-depth activities on which the committee wanted to embark in an effort to improve the image of the medical profession and open lines of communication throughout the state. After a very thorough discussion, it was moved and carried to approve the program

500A	Articles of Incorportion & Bylaws	$ 100.00
500D	Board of Directors	6,000.00
500E	Executive	6,000.00
500F	Finance	500.00
500G	Grievance	100.00
500J	Maternal & Child Health Care	1,500.00
500K	Health Manpower	1,200.00
500L	Legislative	36,000.00
500M	Medical Education	3,500.00
500N	Medical Economics	1,650.00
500O	Environmental Health	600.00
500Q	Professional	4,000.00
500R	Public Relations	15,000.00
500S	Governmental Services	2,000.00
500U	Resident Physician	1,000.00
500V	Ad Hoc	3,000.00
500W	ArMA Auxiliary	1,000.00
500X	Physician's Health	3,500.00
	Total Expenditures	$86,650.00

proposed by the Public Relations Committee and that the monies therefor, in excess of that committee's 1983 budget and up to an additional $12,900.00 will be taken from ArMA's contingency fund, subject to approval of specific amounts by the Executive Committee.

It was moved and carried that the Association direct a letter to the health care financing administration (HCFA) expressing ArMA's interest in participating in the peer review organization program (PRO) which would be implemented under the Peer Review Improvement Act of 1982 and open communications regarding same.

The Health Manpower Committee requested that an ad hoc committee on state manpower assessment be formed to develop a broad-based ongoing data system on physician manpower. The Board determined that the Committee could handle this and Board action was not required.

It was moved and carried that the President, at his discretion, appoint an individual to serve as ArMA's representative on the statewide advisory committee for the Rural Health Office.

It was moved and carried to table the matter of future or continued support of the Rural Health Conference until such time as a specific request to participate is received.

It was moved and carried to confirm the appointment of Norman L. Fee, M.D. and Robert B. Leonard, M.D. to the Ad Hoc Committee on Hospital Services for the terms 1982-1983.

It was moved and carried to confirm the appointment of William N. Neubauer, M.D. as a member of the Legislative Committee for the term 1982-1985.

Chairman of the Legislative Committee, Dr. Kurtz, reported to the Board that the committee was attempting to meet every two weeks throughout the session, with Dr. Kurtz, Allan Stanton and Kevin Walker meeting once a week. He additionally advised that a newsletter was being worked out to insure that everyone could be kept updated on all legislative activity and that a reception with the legislators will be held on February 1, 1983, at the Phoenix Country Club.

It was moved and carried that the Long Range Goals of the Association adopted in February of 1981 be consolidated and reprioritized in the following order.

1. To promote opitmal health and medical services for the citizens of Arizona.
2. To determine the most effective organizational structure and communication mechanisms for the Arizona Medical Association.
3. To represent the entire medical profession, including medical students, in Arizona; such representation to include but not be limited to being the advocate of the membership with the legislative, administrative and judicial arms of state government.
4. To expand the role of the Association in promoting and elevating the standards of medical ethics.
5. To provide to individual members benefits and services to aid them in their professional pursuits.
6. To represent the membership in matters pertinent to the economics of medicine.
7. To represent the membership in matters pertaining to medical education, scientific affairs and promotion of the art and science of medicine.

It was moved and carried that the dates of the annual meeting of the Arizona Medical Association be moved from the existing time in May of each year back to the last week in April of each year, it being understood that this change might not be possible prior to 1986 due to existing contracts and commitments with host hotels for the years 1983, 1984 and 1985, which might not be able to be altered.

It was moved and carried to recommend to the Scientific Assembly Committee that it consider conducting a symposium for the membership on the subject of bioethics.

It was moved and carried to confirm the appointment of Donald J. Ziehm, M.D. as a member of the Maternal and Child Health Care Committee for the term 1982-1985 and as chairman of its Maternal Mortality Section.

Approval of CME accreditations for the following hospitals was received by the Board: St. Mary's Hospital & Health Center; Phoenix Baptist Hospital & Medical Center; Camelback Hospitals; Inc., St. Joseph's Hospital, Tucson; Tucson Hospitals Medical Education Program and Phoenix Memorial Hospital.

It was moved and carried to approve the appointment of Thomas J. Gannon as member of the Medical Education Committee for the term 1983-1984.

It was moved and carried that the request of the Medical Education Committee be granted and said committee should proceed to solicit recommendations from the Arizona Academy of Family Physicians of members of the Academy who would be interested in the work of the Medical Education Committee and willing to serve as a member thereof.

It was moved and carried that the Arizona Medical Association convey by letter to the Board of Medical Examiners its concern over recent decisions of the Federation of State Medical Boards that might 1) no longe recognize the certificate of the the National Board of Medical Examiners a standard for licensure and 2) separa the FLEX examination into two parts with the requirement that the first portion must be passed before a physician can begin his second year o postgraduate training.

It was moved and carried to table th request of the Physician's Health Committee for provision of funds for legal defense of its members until suc time as general counsel for the Association has the opportunity to review the matter in light of existing Association policies of insurance and render his opinion to the Board.

It was moved and carried that the Arizona Medical Association support the position that anyone who is identified as an athletic trainer should have appropriate training and credentials as a certified athletic train

It was moved and carried to confirm the appointment of Robert E. Kravetz, M.D. as a member of the Public Relations Committee for the term 198 1986.

It was moved and carried that the Arizona Medical Association cooperat with SamCor in the production of "Health Highlights," providing SamCo approves the following points in a lett of agreement: 1) that the Arizona Medical Association have input regarding participants, content, forma structure and research; 2) that this agreement does not preclude the Arizona Medical Association from cooperating with other hospitals or organization in the production of similar health oriented programs; 3) that both the Arizona Medical Association and SamCor have the option of terminating their agreement after 60 Days' notice; and 4) that the Arizona Medical Association receive appropriate credit for its assistance in producing the program in the openin and closing credits in a form that is acceptable to the Public Relations Committee.

It was moved and carried to accept the recommendation of the Nominati Committee that a resolution marked exhibit "A" attached here to and by reference incorporated herein, amending Chapter V, Section 1 of the Association bylaws to expand the grou eligible for nomination and election b submitted to the House of Delegates for its consideration during its May 19 meeting.*(Note this resolution will not be reprinted here, but a copy can be obtained from the ArMA office.)*

AD HOC COMMITTEE ON HOSPITAL SERVICE

The meeting of the Ad Hoc ommittee on Hospital Services of the rizona Medical Association, Inc. held 810 West Bethany Home Road in hoenix, Arizona, on Saturday, January , 1983, convened at 3:30 p.m., Walter Eicher, M.D., Chairman, presiding.

ospital Growth and Expansion

Dr. Schamadan, President of ottsdale Memorial Hospital, conveyed the committee his personal views lating to hospital growth and pansion here in the Valley and across e nation, specifically citing what he els are the most notable causes for e various changes being seen, tlining the doctor/hospital roles in e problems being faced, as well as ssible solutions to those problems.

Following a brief question and swer session, the members thanked r. Schamadan for his very helpful mments and expressed their preciation for his time and energies their behalf.

ducational Program

Dr. Neil Ward presented, and arrated, for the committee's review a ide presentation which he felt might e the basis for an educational program be conducted by the committee for edical staffs throughout the state prising them of facts relating to the st and delivery of health care, the rowth of and competition among ospitals, the roles played by medical affs and hospital boards, federal and gislative changes impacting on health are, and the need for physicians to ecome involved in organized edicine.

Dr. Ward was commended on the resentation, which the committee felt ould be most appropriate for the type program it had envisioned.

83 Annual Meeting Resolutions

The committee reviewed and iscussed the January 27, 1983 letter om Dr. Oakley regarding submission resolutions for consideration at the 83 Annual Meeting of the House of elegates.

lans for the Future

Following discussion by the members resent, it was determined that the ommittee would:

1. Schedule another meeting of the ommittee at the earliest date at which on Krause and Dr. Merlin DuVal ould be present to give the members e benefit of their thoughts as they late to the areas of concern being ddressed by the committee.

2. Refine and formalize the resentation prepared by Dr. Ward in rder that it could be viewed by the xecutive Committee during its meeting n February 25, 1983, allowing for approval by the Association prior to the scheduling of appearances before medical staffs.

3. Give thoughtful consideration to resolutions which might be presented by the committee to the 1983 Annual Meeting of the House of Delegates, with each member formulating ideas for discussion and finalization during the next meeting of the committee.

LEGISLATIVE COMMITTEE

A meeting of the Legislative Committee of the Arizona Medical Association, held on Saturday, January 29, 1983, at 810 West Bethany Home Road, Phoenix, convened at 11:15 a.m., Clyde W. Kurtz, M.D. Chairman, presiding.

Consideration of Printed Bills

H.B. 2005- Adult abuse, immunity for reporting

It was moved and carried to offer general support for H.B. 2005.

H.B. 2006- Medical assistance for aged; repeal

There was some concern expressed as to whether elderly Arizonans would lose their freedom of choice if this program is repealed. It was explained that the program was not being funded and that the elderly were covered by other programs.

It was moved and carried to take no action on H.B. 2006.

H.B. 2024- Insanity defense; elimination

Mention was made of several bills concerning this subject and that the Committee would wait until the Arizona Psychiatric Society made its recommendation later in the meeting.

It was moved and carried to hold for recommendation of Arizona Psychiatric Society.

H.B. 2041- Heart Services Exemption

The bill was introduced to allow Boswell and Mohave General Hospitals to establish cardiac catheterization units outside of the CON process.

It was moved and carried to offer non-support for H. B. 2041.

H.B. 2053- Supervisory Care Services

This bill is one which appears each session and is designed for one specific supervisory care home owner. Testimony has already been taken on HB 2053 before the House Health Committee and action will be taken at the meeting on January 31, 1983.

It was moved and carried to offer active non-support for H.B. 2053.

H.B. 2086- Mandatory Seatbelt Use

After a short discussion, it was decided to present the AMA position on this issue to the sponsor of HB 2086, Representative Peter Goudinoff.

It was moved and carried to actively study H.B. 2086.

H.B. 2137- Optician Advertising

It was moved and carried to take no action on H.B. 2137.

S.B. 1006- Insanity Defense

This is another bill similar to H.B. 2040. The Chairman stated that all these related bills would be lumped together and discussed as one.

It was moved and carried to hold for recommendation of Arizona Psychiatric Society.

S.B. 1016- Tortfeasors Contributions

The Committee was informed that the business community is strongly pushing this bill. Discussion followed regarding its impact in the area of medical malpractice.

It was moved and carried to actively study S.B. 1016.

S.B. 1017- Naturopaths; designation; initials

It was moved and carried to offer general support for S.B. 1017.

S.B. 1048- Child Protection Act

Mention was made that this is only one of many abortion bills which will be coming up this session. It was brought out that there is no definition of "quick child" as used in this bill. ArMA will take no position on the moral issue of abortion, yet needs to react to legislation as it impacts upon the practice of medicine.

It was moved and carried to actively study S.B. 1048.

S.B. 1094- Medical advisory board, revolving fund

It was moved and carried to offer general support for S.B. 1094.

Draft Legislation re: Therapeutic Drug Substitution

This bill is aimed at Hospital Pharmacies. It concerns a practice they have been doing illegally for some time and they want a modification so they will not be breaking the law. The ArMA lobbyist told the Committee he had spoken before the Pima County Medical Society, Legislative Committee, and they expressed total opposition to this bill.

It was moved and carried to offer active non-suport for this bill when it is introduced.

H.B. 2087- Insurance department; health care jurisdiction

It was moved and carried to actively study H.B. 2087.

H.B. 2116- Shared parental responsibility; miners

It was brought out that any legislation with custody becomes a very complicated issue.

It was moved and carried to take no action on H.B. 2116.

H.B. 2144- Fetal experimentation; physician-patient privilege inapplicable

This bill is scheduled to be heard before the House Health Committee on January 31, 1983. It was pointed out that to stop all fetal experimentation would be an impediment to the practice of medicine. It is anticipated that the U of A College of Medicine will need to react to this bill.

It was moved and carried to offer non-support for H.B. 2144.

H.B. 2145- Abortions in public facilities prohibited

It was moved and carried to actively study H.B. 2145.

H.B. 2149- Governmental competition with private enterprise

The Committee requested that a summary be made of this bill for further clarification.

It was moved and carried to offer non-support for H.B. 2149.

H.B. 2159- Look-alike drugs; Placebos

This bill, introduced by Representative Meredith, is scheduled for the House Judiciary Committee meeting on January 31, 1983. It clarifies the language dealing with placebos which was added by the Association last year.

It was moved and carried to actively study H.B. 2159.

H.B. 2164- Water regulations; penalties; fees; funds

It was moved and carried to ask the Environmental Health Committee for a recommendation.

H.B. 2167- Naturopathy

This bill would expand the scope of practice of naturopathy.

It was moved and carried to offer active non-support to H.B. 2167.

H.B. 2170- Inhalation inhibitors

It was moved and carried to ask the Environment Health Committee for a recommendation.

H.B. 2182- Appropriation; nuclear emergency management funds.

It was moved and carried to ask the Environmental Health Committee for a recommendation.

S.B. 1036- Crime victims compensation board

It was moved and carried to take no action on S.B. 1036.

S.B. 1086- Special Agency Funds

Because of the economic situation, the Legislature is attempting to make all the "90-10" agencies "80020". It is expected this would result in a rise in cost of physicians' fees.

It was moved and carried to offer non-support for S.B. 1086.

S.B. 1120- Insanity defense

The Arizona Psychiatric Society is adopting the position of the American Psychiatric Society on this issue and has been actively involved in the development of this legislation.

It was moved and carried to offer general support for S.B. 1120.

H.B. 1147- Public health; smoking on buses

It was moved and carried to actively support S.B. 1147.

S.B. 1165- Adults under guardianship; reporting injuries

It was moved and carried to actively study S.B. 1165 and bring the bill back to the next meeting.

Draft Legislation re: Malpractice Issues

Privacy and Privilege of Patient's Medical Information- This bill would be a protection to the medical profession.

It was moved and carried to offer active support for this bill when it is introduced.

Periodic Payments and Contingent Fee Schedule-Dr. Sattenspiel reported that he had met with the House and Senate Health Committee Chairmen to bring to their attention that the malpractice issue is still around and to discuss possible legislation. . . . Received for information only.

Draft Legislation re: Sodium Labeling

A draft bill and memorial have been prepared as a result of House of Delegates action last year.

It was moved and carried that sponsors be found for these bills and that ArMA actively support them.

Arizona Mental Health Act

Dr. Daehler explained the draft legislation (distributed to all members) of the Arizona Psychiatric Society. He said the Society is actively supporting the bill and is playing a role in introducing it. The reason for some of the changes has been that in Title 36 there is a problem with determining people commitable under the definition of "they show no harm to oneself or someone else." Mike Green has been hired by the Psychiatric Society to be their lobbyist and the Legislative Committee was assured that he will work closely with Allan Stanton, ArMA Lobbyist on the issue. . . Received for information only

Crippled Childrens' Issue

Allan Stanton reported he had been working closely with all parties concerned in this issue and was on the brink of a settlement. He said there would have to be a bill that would strike "physician services" from the bidding process and leave the outpatient activities in place, with conditional appropriations to be agreed upon. The present plan is for DHS to maintain the current facilities until this can meld into where the inpatient services will be located. He felt the Governor would be supportive of this plan. . . . Received for information only.

Issues Relating to Drunk Driving and the Drinking Age

It was the consensus of the Committee that ArMA should be involved in an educational process relating to drunk driving.

It was moved and carried that the committee recommend to the Board of Directors that the Professional Committee be directed to explore appropriate activities for ArMA in the area of drunk driving and alcohol abu and that their recommendations be considered for possible introduction a the May meeting of the House of Delegates.

It was moved and carried that ArM offer general support for legislation which would raise the drinking age to 21. (H.B. 2126 and H.C.R. 2004)

Annual Meeting

The Committee was reminded of th deadline for submitting resolutions fo the Annual Meeting.

Other Business

Dr. Scott informed the Committee o a conversation with Dean Jack Cole, School of Pharmacy-U of A, re: Clinic Pharmacist bill. He said the present draft was submittted to Dr. Cole and i ArMA wanted to modify it, now was the time. Dr. Cole's prime concern wa that the clinical pharmacist be able to do things he has been trained to do.

It was moved and carried that ArMA suggest that what clinical Pharmacists can do, be in accordance with Rules and Regulations developed by the Board of Pharmacy and approved by the Joint Board of Medical and Ostepathic Examiners and that their activities be in accordance with the protocol of the attending physician in each case.

It was moved and carried that this suggestion in no way commits the Association to supporting the Bill.

PUBLIC RELATIONS COMMITTEE

The meeting of the Public Relations Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, January 29, 1983, convene at 1:12 p.m., John T. Clymer, M.D., Chairman, presiding.

Review of 1/22/83 Action of Board o Directors

The committee heard a report that the Board of Directors, during its meeting on January 22, 1983, had approved ArMA participation in the production of the SamCor *Health Highlights* program, despite the fact that ArMA would have input rather than total control of the program and also that ArMA is not to be accorded production facilities. The members of the committee recommended that:

1. Disclaimers regarding opinions expressed by participants be included at both the open and close of the program.
2. Participants express their own medical opinions and not set standards of care for the community.
3. The program schedule be printed in *Arizona Medicine.*

4. The program credits read “Health ghlights presented by SamCor in operation with the Arizona Medical sociation.”

Additionally, Dr. Nieri volunteered to eet with the SamCor production team d ArMA's Director of ommunications to suggest a program hedule and guest speakers with input other members of the committee.

dget Increase

By reason of the budget increase anted by the Board of Directors ring its January 22nd meeting, Nikki ertz, Director of Communications, as directed to prepare, for committee view, a specific program for media nners and other projects, expenses r which would be allocated to such crease.

edia Awards Program

The committee requested that Mrs. ertz prepare a specific program for e presentation of awards recognizing cellence in health and medical porting in both the print and ectronic media.

ew Pamphlets

A number of topics for ArMA's third amphlet in its patient education series ere discussed, including medications, ractice characteristics of physicians nd non-physician health care roviders, and a patient satisfaction rvey. The committee recommended rther review of pamphlets currently vailable prior to making a final ecision in the matter.

dvertising Campaign

Although the committee briefly iscussed an advertising campaign, ction was postponed until the next eeting of the committee in nticipation of receiving the ads repared by the Monterey County ledical Society.

ong Range Goals and Objectives

It was determined that the subject of e committee's long range goals and bjectives be postponed until the next eeting.

orrespondence

hild Passenger Restraints

Progress report on public information rogram regarding child passenger straints. . . Received.

983 Annual Resolutions

The committee reviewed the letter eceived from Dr. Oakley regarding ubmission of resolutions for House of elegates consideration during its 1983 nnual Meeting and each member was equested to give thought to any issues hich might be timely subjects for elegate resolutions.

rgan Donors

The question of better record dentification of organ donors was iscussed by the committee, but no ction was taken.

ENVIRONMENTAL HEALTH COMMITTEE

A meeting of the Environmental Health Committee of the Arizona Medical Association, Inc., held on Tuesday, February 15, 1983, at 810 West Bethany Home Road, Phoenix, convened at 6:50 p.m., Willis A. Warner, M.D., Chairman, presiding.

Ron Miller, Ph.D., Bureau Chief, Water Quality Control, ADHS, and Bruce Scott, Bureau Chief, Waste Control, ADHS, told the Committee about the asbestos problem in Globe, which has been in existence since 1976, and the TCE problem in Tucson. Arizona has six hazardous waste sites on the EPA list which are in dire need of assistance and monies from the Super Fund may be available so help can take effect by the Fall of 1983.

The following bills were discussed and recommendations were made by the Committee to be passed on to the Legislative Committee for follow-up.

H.B. 2164- Water regulations; penalties; fees, fund

ADHS Director could require that plans and specifications for water and wastewater systems include programs to control contamination from backflow and cross connections and to meet future needs for drinking water and sewage treatment. Fines up to $10,000 a day could be levied for failure to comply with regulations. Fees and fines would go to a revolving fund to pay for water regulation programs.

Recommendation: General support

H.B. 2170- Toxic vapors; inhalation inhibitors

Substances certified by the state as containing an additive that inhibits inhalation or induces sneezing would be exempt from the law that restricts the sale of glue and other vapor releasing substances that contain toxic substances. The Committee was advised that there is a new glue on the market that is so inhibited a person cannot “get high” from sniffing, and that regulations are already in effect controlling other glue substances.

Recommendation: No action

H.B. 2182- Appropriation: nuclear emergency management fund

Appropriation bill to continue work on a state program to respond to a nuclear emergency at the Palo Verde nuclear power station west of Phoenix. ADHS is taking no action on this bill.

Recommendation: No action

H.B. 2221- Onsite wastewater treatment facilities; regulation

Governing state regulation of water treatment plants would be expanded to require ADHS to regulate the design, construction and operation of all facilities in the state that treat and dispose of wastewater generated at the sites where the facilities are located. Not applicable to septic tanks. Calls for annual inspections and fines. This bill is primarily geared for the Sedona area. Bill is currently being amended.

Recommendation: General support

H.B. 2258- Mosquito control, pest abatement districts

Bill would allow a county board of supervisors to establish a special mosquito control and pest abatement district. As it stands now, counties have limited opportunities to initiate taxation and this would allow an area to form for tax purposes. (Bill has been put in subcommittee since it was agreed the language is too broad and too vague.)

Recommendation: General support

H.B. 2284- Groundwater quality; agriculture practices

Prohibition of discharging agriculture or irrigation water that reduces groundwater below state water quality standards would not apply to agricultural water affected by state-approved pesticide spraying or agricultural water affected by fertilizers, etc. ADHS feels this bill is not in the best interests of the state.

Recommendation: Active non-support

H.B. 2285- Water quality control council membership

Expands the membership of the state water quality control to 17 by the addition of 4 governor-appointed members “who have expressed interest in and are knowledgeable concerning problems of water quality control.” Committee felt that if any expansion occurred, a physician should be on the council.

Recommendation: Non-support

H.B. 2326- Hazardous waste management and regulation

Bill designed to bring Arizona up to the present standards in regards to hazardous waste management and make it eligible to be certified by EPA.

Recommendation: General support

H.B. 2352- Supplemental appropriation; vehicle emissions

General “housekeeping” bill.

Recommendation: No action

H.B. 2415- Air pollution; permit fee limit

Establishes a maximum fee for processing an application for installation or operating permit for reduction of pollutants. Would cut down considerably on revenue from current fee scale and ADHS actively opposed.

Recommendation: Non-support

H.B. 2432- Vapor-releasing paints;

warning

Requires a hazardous warning label for containers of toxic substances.

Recommendation: No action

H.M. 2001- Vietnam veterans; agent orange exposure

Requires elected officials to send a message to the Congressional delegation to investigate veterans' health histories. This investigation is already being conducted.

Recommendation: No action

S.B. 1137- Toxic substances management

ADHS will introduce a "strike-everything" amendment to this bill and propose that a study committee, made up of House/Senate members, be formed to develop a format to collect information and discuss the issue and come back next session with a bill. Final report to be ready on or before December 1, 1983. Suggested that a physician be added to the study committee.

Recommendation: General support (As amended, with a physician included)

S.B. 1209- Water Quality assurance revolving fund

Prescribing use and application of monies in water quality assurance revolving fund. (Only new language in this bill was amended out in Committee.)

Recommendation: Active support

Pat Chorpenning, legislative liaison, ADHS, said that S.B. 1263-Water pollution control, would be coming up soon. He said a decision was made to talk to the Senate Health Chairman and ask him to hold the bill since so many people were opposed to it. It is an EPA bill and not solely an environmental health bill. ADHS Director will establish an in-house group to gather information. They will study 1) wastewater discharge, 2) underground injection control and 3) groundwater quality.

Mr. Chorpenning also told the Committee that ADHS is pleased to work closely with ArMA in all current legislation.

HEALTH MANPOWER COMMITTEE

A meeting of the Health Manpower Committee of the Arizona Medical Association, held on Thursday, February 17, 1983, at 810 West Bethany Home Road, Phoenix, convened at 6:30 p.m., Laurence M. Linkner, M.D., Chairman, presiding.

Rural Health Conference

Board action—It was reported that the Board put this subject "on hold." The Yavapai County Medical Society decided not to participate.

1983 Planning Meeting—Dr. Linkner informed the Committee that the format for the 1983 meeting has been decided and the theme will be "Promotion of Disease Prevention."

Statewide Council on Nursing

The Committee was advised that the Council had completed a position paper with 9 recommendations. Their biggest problem is the feeling of lack of worth as professional in the health care system. An Ad Hoc group will be informed to meet and discuss and make positive recommendations. Since it will be a group with sponsorship and appointed members, it was felt that ArMA will be asked to have a representative. Dr. Linkner said he felt someone else should be the representative on the Nursing Council since he has been on for several years. It was also reported that the Nursing Manpower Study has been completed.

Medical Manpower Study

It was suggested that there should be a statistical document that can be relied on and that an Ad Hoc committee should be formed to get an effective assessment on the physician manpower situation and report back either that: a) it is necessary, b) it is not necessary, or c) it is a tremendous project and will be costly.

It was moved and carried that an Ad Hoc Committee be formed, chaired by Marilyn J. Heins, M.D., with committee members selected by Dr. Heins, to see what data is available and report back to the Health Manpower Committee with progress.

The following bills were discussed and recommendations were made by the Committee to be passed on to the Legislative Committee for follow-up:

H.B. 2167- Naturopathy

Allows naturopaths to perform minor surgery and use antiseptics and local anesthetics.

Recommendation: Active non-support

H.B. 2266- Physical Therapists' Services

Allows physical therapists to function without a physician's referral.

Recommendation: Active non-support

H.B. 2281- Regulation of Physician Assistants

Adds three physicians' assistants to the present Board.

Recommendation: Active non-support

H.B. 2410- Myopractice Examiners

Establishes a state board for myopractic examiners.

Recommendation: Active non-support

H.B. 2430- Homeopathic Doctors

Prescribing qualifications for homeopathic physician license.

Recommendation: Active non-support

H.B. 2448- Dentistry

Recommendation: No Position

S.B. 1138- Chiropractic Services Insurance

Mandates insurance for chiropracti services.

Recommendation: Active non-support

S.B. 1255- Health Complaint Reviews

Provides for health occupations board of review.

Recommendation: Active non-support

S.B. 1256- Clinical Pharmacists

Provides for registration and practic of clinical pharmacist practitioners.

Recommendation: Active non-support

S.B. 1262- Psychologist Service Insuran

Mandates insurance for psychologis services.

Recommendation: Active Non-support

LEGISLATIVE COMMITTEE

A meeting of the Legislative Committee of the Arizona Medical Association, held on Saturday, Februar 19, 1983, at 810 West Bethany Home Road, Phoenix, convened at 11:15 a.m. Clyde W. Kurtz, M.D., Chairman, presiding.

Consideration of Printed Bills

S.B. 1138- Insurance; chiropractors; benefit denial prohibited

Mandates insurance for services performed by chiropractors. The bill has been heard in committee and amended to include naturopaths.

It was moved and carried to offer active non-support for S.B. 1138.

S.B. 1139- Governor's council on development disabilities

A 28-member council would be created to study problems, make reports and recommendations, etc.

It was moved and carried to offer general support for S.B. 1139.

S.B. 1175- AHCCCS; U.S. citizenship; lawful alienage

Requires legal citizenship for qualification of AHCCCS.

It was moved and carried to take no action on S.B. 1175.

S.B. 1183- Child passenger restraint system; use

Bill will be held because of similiar House bill which is much fuller. Believed there will be House approval on it.

It was moved and carried to offer active support for S.B. 1183.

S.B. 1204- Unlicensed nursing care, day care

Permits nursing care institutions and day care centers to operate without the otherwise required state licensing if ey posted conspicuous notice that ey were unlicensed. Committee felt ere should be a balance of cost of e against what is ideal, but did not nk it needed to be mandated. DHS is posed to this bill. It was decided to oup all the nursing home bills gether for active study.

t was moved and carried to actively dy S.B. 1204.

. 1214- Paternity; tissue tests; parental bility

Tissue comparisons would have the me status as blood group tests in termining paternity.

t was moved and carried to offer neral support for S.B. 1214.

B. 1224- Behavioral health budget; aluation unit

A new ERT section would be vented to study how well the partment's public and behavioral alth program work.

It was moved and carried to actively udy S.B. 1224

B. 1225- Health; adolescent life support mmission

Committee agreed that this is a major ncern today (pregnant teenagers) and should be forward in an active-iented way to help.

It was moved and carried to offer eneral support for S.B. 1225

B. 1239- Homicide; fetus

Committee was advised that this is ne of several abortion bills which ould be grouped together and given mmediate action. It was agreed to form Task Force with Dr. Sattenspiel and her members together with MICA presentation to decide what approach take.

It was moved and carried to actively udy S.B. 1239 with the help of a Task orce.

B. 1250- Health care cost committee; xtension

Extends the life of the Health Care ost and Regulation Committee to July 1, 1984. ArHA has recommended an terim committee if this extension is ranted.

It was moved and carried to offer eneral support for S.B. 1250.

B. 1251-Emergency medical services perating fund

Establishes assessments for hazardous noving violation to go into an mergency medical services operating und.

It was moved and carried to offer eneral support for S.B. 1251.

B. 1252- Hospital reports

Provides for a uniform billing and lischarge data summary reporting rogram for hospitals. ArHA told the Committee this would be very xpensive to implement.

It was moved and carried to actively tudy S.B. 1252

S.B. 1269- State health and accident coverage

State personnel board would designate AHCCCS as a qualifying plan.

It was moved and carried to offer non-support for S.B. 1269

H.B. 2146- Crimes; manslaughter; feticide

It was moved and carried to actively study H.B. 2146 with the help of a Task Force

H.B. 2173- Abortion; insurance coverage; limitations; restrictions

It was moved and carried to actively study H.B. 2173 with the help of a Task Force

H.B. 2185- Drug records; confidentiality

Committee agreed that this bill would strengthen the present law.

It was moved and carried to offer general support for H.B. 2185

H.B. 2187- Pharmacists; qualifications

Lists state qualifications for registration as a pharmacist.

It was moved and carried to take no action on H.B. 2187

H.B. 2195- Ambulance regulations; DHS authority; subjects

Expand authority of ADHS to register ambulances.

It was moved and carried to offer general support for H.B. 2195

H.B. 2209- Children; nutritional or medical deprivation

Abortion bill with major problems in language. Sponsor unwilling to back off.

It was moved and carried to actively study H.B. 2209 with the help of a Task Force

H.B. 2239- Shareholders of professional corporations

Current restrictions for transferring shares in a professional corporation would be expanded to allow shares to be put into trust for the benefit of the immediate family or families of the licensed professionals.

It was moved and carried to actively study H.B. 2239

H.B. 2263- Homicide; fetus

H.B. 2264- Wrongful death action; fetus

It was moved and carried to actively study H.B. 2263 and H.B. 2264 with the help of a Task Force

H.B. 2266- Physical therapists; unprofessional conduct

Committee was advised that the current curriculum at NAU for physical therapists is very inept and needs to be dealt with in depth. It was decided to form a Task Force to work on this bill. Task Force would include: Edward T. Butler, M.D., Sam Colachis, M.D. and Lawrence Green, M.D.

It was moved and carried to offer active non-support for H.B. 2266

H.B. 2271- Uniform contribution among tortfeasors

This bill is identical to S.B. 1016.

It was moved and carried to offer general support for H.B. 2271.

H.B. 2281- Physician assistants; regulation

Bill would codify existing rules and regulations and add 3 physician assistants to Board.

It was moved and carried to offer non-support for H.B. 2281

H.B. 2283- Nursing care institutions; requirements

Committee was told that this bill should have some definite classification for rural areas.

It was moved and carried to offer non-support for H.B. 2283

H.B. 2312- Child passenger restraint system

It was moved and carried to offer active support for H.B. 2312

H.B. 2313- Hospital pharmacists; therapeutic substitutions

ArHA reported that this bill is different from the original form. He also said there were some grey areas as to whether or not it would be legal.

It was moved and carried to offer non-support for H.B. 2313

H.B. 2342- State action; recover medical costs

Concerns third-party liability for injured person.

It was moved and carried to actively study H.B. 2342

(Bills Distributed at Meeting February 19, 1983)

H.B. 2324 - Child protection act (abortion)

It was moved and carried to actively study H.B. 2324 with the help of a Task Force

H.B. 2351- Driving while intoxicated

Changes in the DWI law.

It was moved and carried to offer active non-support for H.B. 2351

H.B. 2382- County medical benefit standards; repel

Indigent health bill. Bill is primarily for Coconino County where eligibility standards do not correspond with AHCCCS standards.

It was moved and carried to offer non-support to H.B. 2382

H.B. 2383- Chiropractic; continuing education

It was moved and carried to take no action on H.B. 2383

H.B. 2390- Patient's ownership of health records

Providing conditions for release of health records.

It was moved and carried to offer active non-support for H.B. 2390

H.B. 2397- BOMEX legal representive

It was moved and carried to offer non-support on H.B. 2397

H.B. 2399- Unprofessional conduct; schedule II drugs

This bill is for the Osteopathic Society.

It was moved and carried to actively study H.B. 2399

H.B. 2410- Board of myopractic examiners

Committee accepted recommendation of the Health Manpower Committee

It was moved and carried to offer active non-support for H.B. 2410

H.B. 2430- Homeopathic physicians; exemption; qualifications

Prescribing qualifications for homeopathic physician license. Committee accepted recommendation of Health Manpower Committee.

It was moved and carried to offer active non-support for H.B. 2430

H.B. 2431- Social workers; licensure

It was recommended that there should be some sort of creditation allowed but ArMA should oppose any attempt of starting another Board. Committee accepted recommendation of Health Manpower Committee.

It was moved and carried to offer active non-support for H.B. 2431

H.B. 2435- Comprehensive hospital cost containment act.

It was moved and carried to offer active non-support for H.B. 2435

H.B. 2436- Hospitals; bed moratorium; rate freeze

It was moved and carried to offer active non-support for H.B. 2436

H.B. 2437- Health care institutions; accounting; reports

It was moved and carried to actively study H.B. 2347

H.C.R. 2016- Hospital cost containment commission

It was moved and carried to offer active non-support for H.C.R. 2016

H.B. 2453- Clinical laboratories; rebates and discounts

Committee agreed to talk to Ronald Spark, M.D. and assist him with this bill.

It was moved and carried to actively study H.B. 2453

H.B. 2456- Sickle cell anemia; adult care

Committee felt that singling out one disease would lead to an "equal-time" situation with other diseases.

It was moved and carried to offer non-support on H.B. 2456

H.B. 2471- DWI; intensive supervision release

Prescribing changes in the DWI bill

It was moved and carried to offer general support for H.B. 2471

S.B. 1246- Luxury tax on controlled substances

It was moved and carried to take no action on S.B. 1246

S.B. 1254- Restructure CON hearing body

Prescribing change in structure of hearing body on Certificate of Need hearings.

It was moved and carried to actively study S.B. 1254

S.B. 1255- Health occupations board of review

Committee accepted recommendation of Health Manpower Committee.

It was moved and carried to offer active non-support on S.B. 1255

S.B. 1256- Clinical pharmacist practitioners

Committee appointed Louis J. Kettel, M.D. and William C. Scott, M.D. to supply backup testimony consistant with that used on physical therapist bill. The diagnosis potential is an important factor here.

It was moved and carried to offer active non-support on S.B. 1256 with the help of above mentioned Task Force

S.B. 1257- Osteopaths

The Arizona Osteopathic Board asked for support of this bill.

It was moved and carried to offer general support of S.B. 1257

S.B. 1259- Medical information; confidentiality; privilege; exceptions

It was moved and carried to offer general support for S.B. 1259

S.B. 1260- Metropolitan health facilities; abolishing bonding

It was moved and carried to offer non-support for S.B. 1260

S.B. 1261- Regional behavioral health centers; hospital

Dr. Daehler asked the committee to hold S.B. 1261 until he attended a legislative committee meeting of the Arizona Psychiatric Association.

S.B. 1262- Insurance contracts; psychologist's services; coverage

The Committee accepted the recommendation of the Health Manpower Committee.

It was moved and carried to offer active non-support to S.B. 1262

S.B. 1264- Perinatal health care program

Committee was advised that this is a good bill and will probably pass with little effort.

It was moved and carried to offer active support for S.B. 1264

S.B. 1265- Prisoners; commitment; mental health treatment

This bill was introduced to make legal what is already happening.

It was moved and carried to offer general support for S.B. 1265

S.B. 1275- Arizona state hospital advisory board

Dr. Daehler asked the committee to hold S.B. 1275 until he attended a legislative committee meeting of the Arizona Psychiatric Association.

S.B. 1277- Pharmacists; third party prescription program

It was moved and carried to actively study S.B. 1277

S.B. 1279- AHCCCS Modifications

Proposes 7 major changes to existing AHCCCS bill.

It was moved and carried to actively study S.B. 1279

S.B. 1290- Optician licensing; ocularist exemption

It was moved and carried to take n action on S.B. 1290

S.B. 1362- Tax credit; child passenger restraints

It was moved and carried to offer active support for S.B. 1362

S.B. 1387- Premartial syphillis tests; rep

Abolishes requirement of premarti syphillis tests.

It was moved and carried to offer active support for S.B. 1387

The Environmental Health Commit Recommendations on the following bills were accepted by the Legislative Committee:

H.B. 2164- Water regulations; penalti fees; find

It was moved and carried to offer general support for H.B. 2164

H.B. 2170- Toxic vapors; inhalation inhibitors

It was moved and carried to take n action on H.B. 2170

H.B. 2182- Appropriation; nuclear emergency management fund

It was moved and carried to take n action on H.B. 2182

H.B. 2221- Onsite wastewater treatme facilities; regulation

It was moved and carried to offer general support for H.B. 2221

H.B. 2258- Mosquito control, pest abatement districts

It was moved and carried to offer general support for H.B. 2258

H.B. 2284- Groundwater quality; agriculture practices

It was moved and carried to offer active non-support for H.B. 2284

H.B. 2285- Water quality control coun membership

It was moved and carried to offer non-support for H.B. 2285

H.B. 2326- Hazardous waste manageme and regulation

It was moved and carried to offer general support for H.B. 2326

H.B. 2352- Supplemental appropriatio vehicle emissions

It was moved and carried to take no action on H.B. 2352

H.B. 2415- Air pollution; permit fee lim

It was moved and carried to offer non-support for H.B. 2415

H.B. 2432- Vapor-releasing paints; warning

It was moved and carried to take nc action on H.B. 2432

H.M. 2001- Vietnam veterans; agent orange exposure

It was moved and carried to take no action on H.M. 2001

S.B. 1137- Toxic substances manageme

It was moved and carried to offer general support for S.B. 1137 (as amended, with a physician included)

S.B. 1209- Water quality assurance revolving fund

It was moved and carried to offer active support to S.B. 1209

·The Committee was advised that the

dium Labeling bill had been drafted it a sponsor could not be found.

It was also advised that the alpractice issues are on the "back-urner," waiting for the right time to nerge.

Allan Stanton reported that he had solved things with St. Joseph's ospital concerning the Crippled hildrens' issue. He said that support as still in the Legislature and he would eep the committee advised.

EXECUTIVE COMMITTEE

The meeting of the Executive ommittee of the Arizona Medical ssociation, Inc. held at 810 West ethany Home Road, Phoenix, Arizona, n Friday, February 25, 1983, a quorum eing present, convened at 7:19 p.m., hn E. Oakley, M.D., President and hairman, presiding.

rizona Department of Health Services

Dr. James E. Sarn, Director of the epartment of Health Services, gave e committee a brief update on epartment activities, commenting that vo major problem areas were urrently being faced—budget cuts and e administration of the AHCCCS rogram. Dr. Sarn indicated that budget its may be offset by a proposed crease in the state's sales tax and that, hile there certainly were some roblems with the AHCCCS program, ecent publicity has carried a certain mount of misinformation and that ost problems, he felt, were in solvable rm. A brief discussion was held egarding a series of bills before the egislature which, if passed, would opefully improve the AHCCCS rogram.

d Hoc Committee on Hospital ervices' Proposed Presentation

Dr. Neil Ward, on behalf of the Ad oc Committee on Hospital Services, resented for the committee's viewing slide presentation which touched on ospital growth in the state, increase of nedical costs, competition, and the eed for physicians to be involved. ollowing the slide presentation, Dr. Vard addressed the committee egarding his committee's feeling that n awareness of these various subjects nust be achieved throughout the state nd, with the approval of the Executive ommittee, the Ad Hoc Committee on Iospital Services intended to make resentations at hospital medical staff, s well as county society, meetings. Dr. Vard advised that the committee oped the presentation would be an nducement to medical staff nvolvement in the recently established Iospital Medical Staff Section of the MA and, should a resolution in rMA's House of Delegates be uccessful, in a like section which would be established at a state level.

It was moved and carried to accept and approve the slide presentation developed by Neil O. Ward, M.D., on behalf of the Ad Hoc Committee on Hospital Services and to endorse its use by that committee at meetings of hospital medical staffs, county societies, and other interested groups throughout the state.

The Newly Unemployed Project

The committee discussed and reviewed the various reactions, mostly positive, received following ArMA's recent plea for physicians to do all they could to assure continuance of medical care for the newly unemployed population within the state and, additionally, took the following action.

It was moved and carried that the Arizona Medical Association contact the Arizona Hospitals, through written communication to the Medical Chiefs of Staff, to see what each is willing and able to do in providing the newly unemployed population with a continuance of good medical care in their time of need.

Retirement Program Committee

The committee reviewed the direction from the Board of Directors that the Executive Committee select the members to serve on a Retirement Program Committee, which would review the existing ArMA program and suggest changes or alterations in that program.

It was moved and carried that the ArMA Retirement Program Committee be made up of the following individuals: Gary L. Henderson, M.D., Franklin D. Loffer, M.D., John K. Kerr, M.D., and Bruce E. Robinson.

Pen, Inc.—Request for Support

The January 27, 1983 letter from Pen, Inc. relating to certain proposed new federal regulations regarding hospital participation in government funded programs, that group's efforts in opposition thereto, and a request for ArMA support was reviewed and discussed by the committee.

It was moved and carried that, subject to the approval of Allan J. Stanton, Esq., a letter indicating ArMA's support of the efforts being made, on a national level, by Pen, Inc. in opposition to proposed new federal regulations for hospital participation in government funded programs, which if enacted, would grant hospital privileges to other than medical doctors.

Use Taxes

Edward Jacobson, counsel for the Association, informed the committee of recent indications that use tax audits have begun, or shortly will begin, to be conducted on members of various professional groups, which could conceivable include physicians. Mr. Jacobson advised the members that use taxes are charged on items which have been purchased out of the State of Arizona rather than in state, in which event sales taxes would apply. During a discussion of the subject it was determined that most individuals are probably not aware of the use tax or the circumstances under which it is applied and that, by reason of this knowledge, ArMA has a responsibility to at least inform its members, and

It was moved and carried that Edward Jacobson, Counsel for the Association, prepare a brief statement for publication in *Medical Memo* which would explain the State of Arizona use tax, the circumstances under which it is applied, and the possibility that audits will be conducted on members of various professional groups, which could include physicians, to determine whether purchases have been made on which a use tax is due and owing.

Letter of George M. Nickas, M.D.

January 31st correspondence of George M. Nickas, M.D. relating his concerns re: hospital growth, medical staffs, etc. together with February 2nd letter of Clyde W. Kurtz, M.D. . . . Received.

American College of Nuclear Physicians

The committee reviewed and discussed an offer from the American College of Nuclear Physicians to provide a member of its Speakers Bureau for a presentation at ArMA's Annual Meeting.

It was moved and carried to advise the American College of Nuclear Physicians that, while the offer to provide a speaker for ArMA's Annual Meeting is most appreciated, the format for that annual meeting, by action of the House of Delegates, has been changed to a two-day business meeting only, with the scientific portion of the meeting having been deleted.

1983 Rural Health Conference

The February 14, 1983 request from Andrew W. Nichols, M.D., M.P.H., for ArMA's continuing support for the rural health conference was reviewed by the committee and a lengthy discussion was held regarding financial vs. non-financial support and it was determined that, while the latter had always been given, documentation needed to be developed to determine when ArMA initially began its financial support.

It was moved and carried that, once documentation had been developed regarding ArMA's previous financial support of the Rural Health Conference, the same be reviewed by Dr. Oakley, who would then respond to Dr. Nichols as to the extent of ArMA's commitment of support for the

1983 Rural Health Conference.

Along these same lines, the committee discussed the possibilities of the Arizona Medical Association developing its own rural health program and

It was moved and carried that the Health Manpower Committee be charged with the development of a Rural Health Program for the Arizona Medical Association.

Other Business

JCAH Standards

The February 17, 1983 letter from Dr. Sammons, together with the publication AMA and the JCAH Standards: Setting the Record Straight were reviewed and discussed at great length by the committee and

It was moved and carried to (1) Circulate a copy of the publication, "AMA and the JCAH Standards: Setting the Record Straight." to all Arizona hospital Chiefs of Staff, soliciting their comments and opinions and (2) develop a resolution to be presented to ArMA's House of Delegates during its May meeting which would, if adopted, instruct ArMA's AMA delegation to oppose the current AMA position regarding the JCAH Standards.

Correspondence

February 14, 1983 letter and article from Clyde W. Kurtz, M.D. relating to the JCAH Standards. . . Received.

February 8, 1983 letter from Maricopa County Medical Society regarding a study of specialty society needs. . . . Received.

Pima County Membership

Report of recent loss of 54 Pima County members as a result of Pima County Medical Society's recent building assessment. . . . Received.

Leadership Conference

Report by Dr. Robles on his recent attendance at the AMA Leadership Conference. . . . Received.

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE

The meeting of the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, February 26, 1983, convened at 2:09 p.m., Charles Henderson, M.D., Chairman, presiding.

Specialty Society Representation

The committee received and reviewed correspondence from the Executive Committee, legal counsel and the Arizona Chapter of the Western Orthopaedic Association concerning the provisions of Chapter VIII, Section 2 (b) of the Association Bylaws, which section allows for specialty society representation in the House of Delegates.

Following a lengthy discussion and on the advice of counsel and the committee chairman, as parliamentarian for the Association and the House of Delegates.

It was moved and carried that the Articles of Incorporation and Bylaws Committee submit to the 1983 House of Delegates Annual Meeting a resolution reading as follows:

Whereas, there appear to be certain inconsistencies in the wording contained in Chapter VIII, Section 2 (b) of the Bylaws of the Arizona Medical Association, which might cause confusion or misinterpretation of the intent of the Section; and

Whereas, there is a lack of standard for specialty society representation in the House of Delegates; now, therefore, be it

Resolved, that Chapter VIII, Section 2. (b) of the Bylaws of the Arizona Medical Association be amended to read as follows:

"(b) Specialty Societies:—A state specialty society shall be entitled to representation in the House of Delegates by one Delegate and alternate who shall be members of the Association if (A) the specialty has a national board recognized as a primary board by the American Board of Medical Specialties, and (B) a minimum of twenty members practicing in Arizona, the majority of whom must be members of the Association, and (C) the activity of the specialty society is manifested by an existing organization or structure exhibiting a slate of periodically elected officers, and established constitution and bylaws, and a frequency of meeting at least once a year, **and (D) in the opinion of the House of Delegates it is deemed to be in the best interests of the Association.** *(Qualifying societies shall be elected to representation by the House of Delegates.)* A specialty society shall have an additional Delegate and alternate for each additional one hundred fifty members of the society who are members of the Association, as determined October first preceding the Annual Meeting."

Dues Billing

The committee reviewed and discussed the request of the Executive Committee that consideration be given to bylaws changes which would allow, through the use of ArMA's newly acquired computer system, for direct billing of member dues. Following a thorough discussion,

It was moved and carried that the Articles of Incorporation and Bylaws Committee would submit a resolution to the 1983 House of Delegates' Meeting which would revise the Association Bylaws to allow for the Association, at its option, to directly b for and collect dues, it being agreed that such resolution would be drafted by the chairman and distributed to th committee members for review and comment prior to its submission to th House of Delegates.

Hospital Medical Staff Section

Dr. Ward, as a member of this committee as well as a member of the Ad Hoc Committee on Hospital Services, mentioned that the Committee on Hospital Services woul most likely be submitting a resolution during the 1983 Annual Meeting whic would, if adopted, allow for the establishment of a Hospital Medical Staff Section within the organization and solicited comments and suggestio for the preparation of such a resolution. In a brief discussion, the members of the committee agreed upon those sections of the existing bylaws which would have to be amended in order to accomplish the desired result.

HEALTH HIGHLIGHTS

Presented by SamCor in cooperati with the Arizona Medical Association

April:

Seasonal Allergies
Byron Updegraff, M.D., Sun City

Schedule:

American Cable—Saturdays, 12:30 p.
Storer Cable—
Mesa/Ahwatukee—Fridays, 3:00 p.m.
Phoenix/Glendale—Mondays, We nesdays, 5:00 p.m.
Western Cablevision—Mondays, 4: P.M.

May:

Vacation Travel Trips
Allen Moore, M.D., Phoenix

Future Medical Meetings

following institutions and organizations have n accredited for their continuing medical cation programs by the Arizona Medical ociation and/or the Accreditation Council for tinuing Medical Education.

rizona Chapter, American Cancer Society
rizona Medical Association
rizona State Hospital, Phoenix
rizona Thoracic Society/Arizona
ung Association
alter O. Boswell Memorial Hospital,
un City
amelback Hospital, Phoenix
esert Samaritan Hospital, Mesa
he Eye Foundation
lagstaff Hospital & Medical Center
of Northern Arizona
ood Samaritan Medical Center, Phoenix
ealth Maintenance Associates, Phoenix
laricopa Medical Center, Phoenix
lemorial Hospital of Phoenix
lesa Lutheran Hospital, Mesa
hoenix Baptist Hospital & Health Center
hoenix Indian Medical Center
t. Joseph's Hospital & Medical Center, Phoenix
t. Joseph's Hospital, Tucson
t. Luke's Hospital & Medical Center, Phoenix
t. Mary's Hospital, Tucson
cottsdale Memorial Hospital
ucson Hospitals Medical Education Program,
(THMEP) Tucson
niversity of Arizona College of Medicine,
Tucson
eterans Administration Medical
Center, Phoenix
eterans Administration Hospital, Prescott

e accredited institutions and organizations above duce a variety of continuing medical education grams. Each accredited institution and anization is responsible for designating which of se programs meet ArMA's requirements for tegory 1 credit. Physicians who participate in grams which are designated Category 1 by credited institutions will receive Category 1 credit vard the ArMA Certificate in CME and the AMA's ysician's Recognition Award.

APRIL

enal and Genitourinary Problems
pril 16. Ramada Safari Resort, Scottsdale. ponsor: University of Arizona College of edicine. Contact: Office of Continuing edical Education, U. of A. Health ciences Center, Tucson, AZ 85724. pproved for 8 hours of Category 1 credit.

dvanced Cardiac Life Support ecertification/Provider
pril 19-21. Phoenix. Sponsor: ACLS, Az ffiliate American Heart Assn. and ArMA. ontact: Doug Allen, Arizona Chapter, merican College of Emergency hysicians, 810 W. Bethany Home Road, hoenix, AZ 85013. Provider course pproved for 21 hours of Category 1 credit nd Recertification approved for 13 hours.

Update Primary Care
April 19-22. Arizona Health Sciences Center, Tucson. Sponsor: University of Arizona Health Sciences Center. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for hour per hour Category 1 credit.

AzAFP's Fifth Annual Page-Powell Education Expedition
April 27-May 1. Lake Powell, Arizona. Sponsor: Arizona Aacademy of Family Physicians. Contact: Arizona AFP, 8534 E. Amelia, Scottsdale, AZ 85251.

MAY

Obesity and Nutrition
May 14. University of Arizona Health Sciences Center. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 8 hours of Category 1 credit.

Current Perspective VII: Drug and Alcohol Abuse
May 19. Doubletree Hotel, Tucson. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 W. Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmembers $20). Approved for 3½ hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
May 18-20. ArMA Offices, Phoenix. Sponsor: ACLS, Az Affiliate American Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter, American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, AZ 85013. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Sixth Annual Arizona Patient/Health Education Conference and Arizona Public Health Association Spring Meeting
May 19 & 20. Radisson Scottsdale Resort. Sponsor: Arizona Department of Health Services Office of Health Education, Arizona Public Health Association, Arizona Academy of Family Physicians, et al. Contact: Arizona Department of Health Services, Office of health Education at (602) 255-1008.

JUNE

6th Annual Summer Pediatric Conference Infectious Diseases and Trauma
June 10-12. Sedona, Arizona. Sponsor: College of Medicine University of Arizona. Contact: Office of Continuing Medical Education and Outreach. U. of A. Health Sciences Center, Tucson, AZ 85724.

Advanced Cardiac Life Support Recertification/Provider
June 23-25. Phoenix. Sponsor: ACLS, Az Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

SUMMER CME CRUISE/CONFERENCES ON LEGAL-MEDICAL ISSUES

Alaskan, Caribbean Mediterranean. Ten and fourteen days in July and August. Approved for 24 CME Category 1 credits (AMA/PRA). Distinguished professors. Fly round trip FREE on Caribbean and Alaskan cruises. Excellent group fares on finest ships. Registration limited. Scheduled prior to 12/31/80—Tax deductible under 1976 Tax Reform Act. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

26th ANNUAL RUIDOSO FAMILY PRACTICE SEMINAR

July 18-21, 1983

Inn of the Moutain Gods
Mescalero, New Mexico

Sponsors: New Mexico Academy of Family Physicians. Accreditation is 20 hours Precribed credit by the AAFP, 20 hours Category I by AMA, and Category IV Required by New Mexico CME.

For further information contact Brenda Gray, Executive Secretary, NMAFP, 6520 Northland Ave. NE, Albuquerque, NM 87109.

Telephone for out-of-state calls is 1-800-545-9011, in-state callse 505-257-5141.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Indian Hospital,
2nd Tues.— Maricopa County Hospital,
3rd Tues.—Good Samaritan Hospital,
4th Tues.—St. Joseph's Hospital.
Sponsor: Maricopa Medical Center

(Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology
Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Ravi Koopot, M.D.

Clinical Conference
Cardiovascular Medicine
Third Tues., 5:15 p.m., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Martin B. Kassell, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff

Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.

Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross
Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conf. Rm.

Neuropathology or
Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing
Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept. & Nov.

Surgical Department CME
4th Friday, 7 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: L.A. Rosati, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 86016 Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm.

Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:0 p.m., T-8 Conference Rm.

Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL, (THMEP)

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Motrin®
ibuprofen, Upjohn
600 mg Tablets

More convenient for your patients

Upjohn

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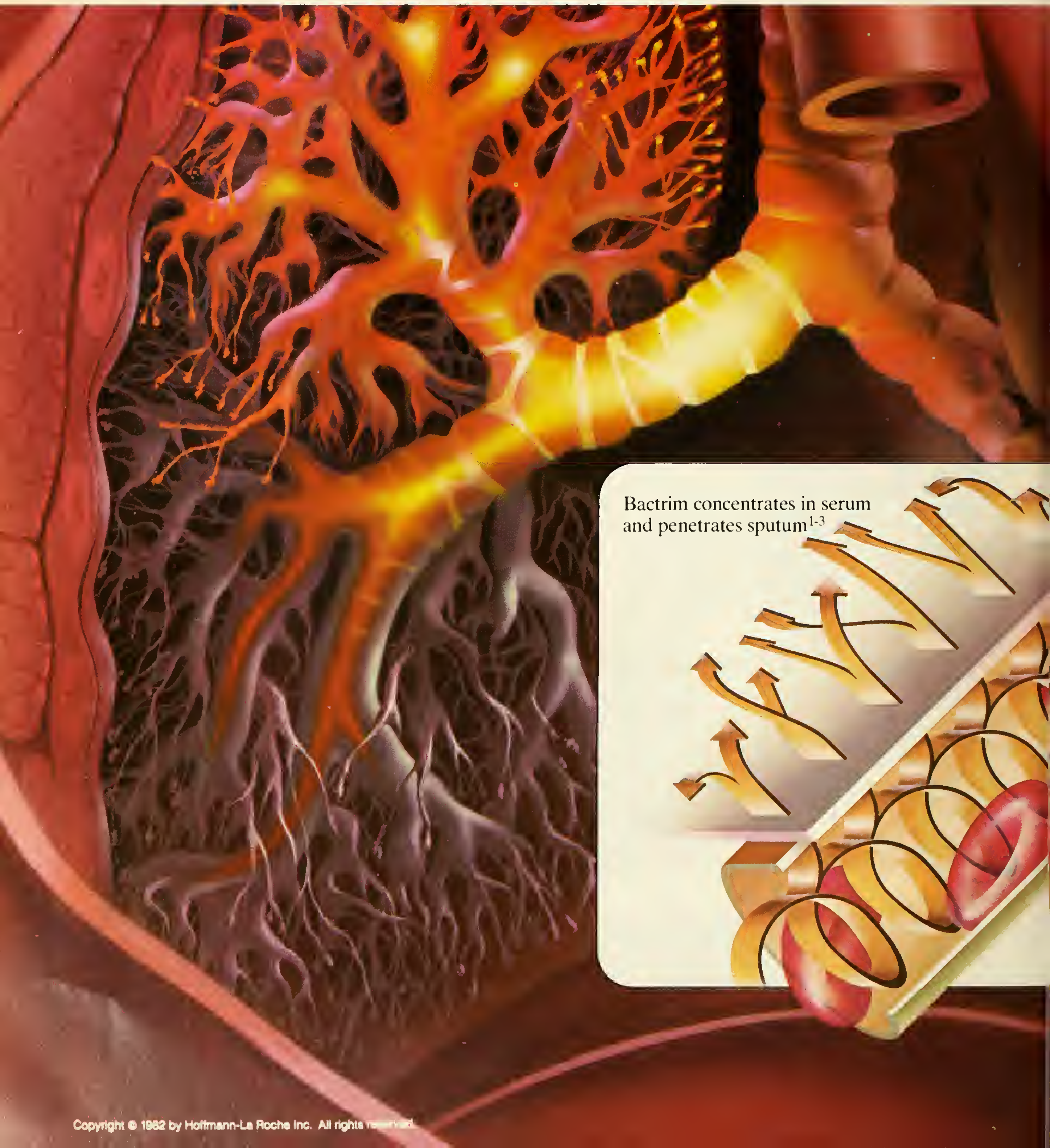
J-9043-4 July 1981

Bactrim™ attacks th
(trimethoprim and sulfamethoxazole/Roche)
in acute exacerbation



Bactrim concentrates in serum and penetrates sputum[1-3]

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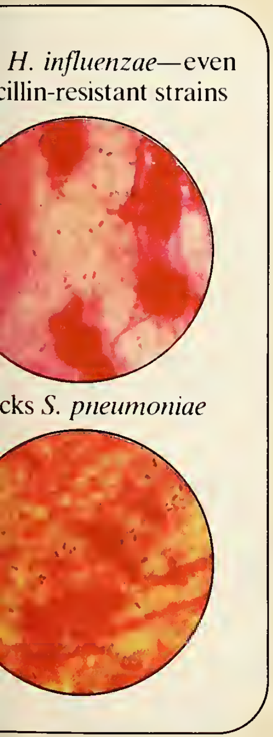
ROCHE®

ajor pathogens
f chronic bronchitis*

Bactrim clears sputum of susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.[4,5] One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.[5]

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.[6]



H. influenzae—even
cillin-resistant strains

cks *S. pneumoniae*

Bactrim reduces coughing and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.[7-9] Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

Bactrim also proved more effective than tetracyclines in 10 clinical trials involving nearly 700 patients.[10] Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: **1.** Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother I/2*:1105-1106, 1971. **2.** Jordan GW *et al: Can Med Assoc J 112*:91S-95S, Jun 14, 1975. **3.** Beck H, Pecherc JC: *Prog Antimicrob Anticancer Chemother I*:663-667, 1969. **4.** Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts;* Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. **5.** Schreiner A *et al: Infection 6*(2):54-56, 1978. **6.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **7.** Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts. Op. cit.*, pp. 15-16. **8.** Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. **9.** Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. **10.** Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

Economical
b.i.d.

Bactrim™ DS

(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

*Due to susceptible organisms. **Please see next page for summary of product information.**

Bactrim™

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: *Double Strength (DS) tablets,* each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose® packages of 100; Prescription Paks of 20 and 28. *Tablets,* each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. *Pediatric Suspension,* containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension,* containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml), fruit-licorice flavored—bottles of 16 oz (1 pint).

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urgical Conference
eekly, Monday 8:00 a.m., Contact:
. Fischer, M.D.
edical Conference
eekly, 12:30 p.m., Contact: Chief Medical
esident.
B/GYN Pathology Conference
eekly, Thursday, 1:30 p.m., Contact: Jay
eishman, M.D.
sychiatry Journal Club
eekly, Thursday, 12 Noon, Contact: Jose
antiago, M.D.

MARYVALE SAMARITAN HOSPITAL

102 W. Campbell Ave., Phoenix, AZ 85008
ontinuing Medical Education Program
nd & 4th Wednesday, 12:30 p.m.,
onference Rms.

umor Board
st & 3rd Mondays, 12-1 p.m., Medical
onference Rms.

MARICOPA MEDICAL CENTER

601 E. Roosevelt, Phoenix, AZ 85008.
ontact: Leonard Tamsky, M.D.
nesthesiology Morbidity & Mortality onference
eekly, Mondays, 2:45 p.m., Santa Cruz
oom, Contact: George Wallace, M.D.
edicine Conference
aily 12-1 p.m., Contact: S. Schaffner, M.D.
hest Surgery Conference
eekly, Mondays, 1:30 p.m.,
anta Cruz Room.
epatology Conference
nd Tuesday, 1:00 p.m., Contact:
tephen Winograd, M.D.
B/GYN Dept. Grand Rounds
eekly, Tuesday, 12 Noon,
anta Cruz Room.
bstetrical Problem Conference
eekly, Tuesday, 7:30 a.m., Yavapai Rm.
rthopedic Conference
eekly, Tuesday, 7:30 a.m.,
anta Cruz Room.
ediatric Grand Rounds
nd Tuesday, 7:30-8:30 a.m., Contact:
obert Ganelin, M.D.
rology Discharge Planning Conference
eekly, Tuesday, 11:30 a.m., Station 42.
and Surgery Conference
eekly, Wednesday, 7:30 a.m.,
anta Cruz Room.
Neurosurgery Discharge Planning
eekly, Wednesday, 1:30 p.m., Station 42.
OB/Neonatology Seminar
eekly, Wednesday, 7:30 a.m., Yavapai Rm.
Clinical Psychiatric Conference
eekly, Wednesday, 11-12 p.m., Mental
Health Annex, Rm. 1346.
Surgery Conference
Weekly, Wednesday, 7-8 a.m.,
Surgical Dept.
Current Concepts in Medicine & Surgery
1st Thursday, 1 p.m., Dr. Hospital Class
Rm., Contact: Dr. Tamsky.
Cardiology Conference
Weekly, Thursday, 2 p.m.,
Santa Cruz Room.
OB/GYN Resident Conference
Weekly,Thursday, 12 p.m., Yavapai Rm.
GYN Endocrine Seminar
1st & 3rd Friday, 12:30 p.m.,
Santa Cruz Room.
OB/GYN Surgical Pathology Conf.
Weekly, Friday, 7:30 a.m., Yavapai Rm.
Orthopedic X-Ray Conference
Weekly, Friday, 7:30 a.m.,
Santa Cruz Room.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for
Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th floor
auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th floor auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D.,
Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.
Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference Rm.
A, Contact: N. Wendell Todd, M.D.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf.
Rm. A, Contact: Drs. L. Fairbanks & E.Y.
Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for
Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva
Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm.,
Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm.
Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251.
Contact: W. S. Williams, M.D., Approved for
Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ,
Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips
Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips
Auditorium.
Psychiatry Conference
3rd Thursday, 7 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ
85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m.,
1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric
Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m
Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact:
J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric
Department.
Medical Grand Rounds
Weekly, Wednesday, 8 a.m., 1st Floor Con
Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st floor Con
Rm.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric
Department.

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
3rd Tuesday, 12 p.m., Contact: Wm. Monteforte.

Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 p.m., Contact. Kim Sowards.

Current Concepts in Medicine
Weekly, Tuesday, 12 p.m., Auditorium.

Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 p.m., Contact: S. Salmon, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.

Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.

Emergency Medicine Lectures
Weekly, Thursday, 8 a.m., Century Rm. A.

Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.

Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.

Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.

Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.

Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.

Perinatal Conference
2nd Monday, 7:30 p.m., Contact: J. Lohman, M.D.

Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.

Surgical Dept. Conference
2nd Monday, 12 Noon, Contact: C. Peter Crowe, Jr., M.D.

Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.

Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.

Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.

Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.

Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.

GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.

OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.

OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.

Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.

GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.

Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.

Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact. Dr. Habib.

Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.

Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm. T-5, Contact: Dr. Zeller.

Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.

Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.

Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIA MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITA & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved f Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 p.m., R N318, Contact: Dept. of Internal Medicine

Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Co
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contac Alan Winfield, M.D. Approved for Catego 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

ponsor: U of A College of Medicine, ucson, AZ 85724. Robert M. Anderson, .D., Dir. of CME. Contact: See below. pproved for Category 1 credit.

nesthesiology Board Review Conference
nd & 4th Monday, 4-5 p.m., AHSC Dining m. C&D, Contacts: Dr. Vaughn & Kryc.

nesthesiology Basic/Clinical Sciences ectures
eekly, Thursday, 4-5 p.m., Room 5403.

nesthesiology Case Discussion
eekly, Wednesday, 7:00 a.m., AHSC, ining Rm. C&D.

nesthesiology Resident Presentation
st Monday, 4-5 p.m., AHSC Dining Room, &D, Contacts: Drs. Otto & Zehngut.

ancer Center Tumor Board Seminar
rd Tuesday, Monthly, 12-1 p.m., HSC uditorium, Contact: Cancer Center.

ardiac Catheterization Conference
eekly, Friday, 4:00 p.m., Contact: r. Temkin.

ardiology Research Conference
eekly, Tuesday, 7:30 a.m., Contact. Dr. oeske.

ucson Cardiovascular Society
st Thursday, 6:00 p.m., AHSC, Contact: r. Byrne-Quinn.

linical Immunology, Allergy & heumatology Rounds
very Friday, Noon-1 p.m. Contact: John oyer, M.D., Dept. of Internal Medicine.

erebrovascular Disease Conference
ondays, 5-6 p.m., Weekly, Rm. 5505., ontact: Jerry Goldstone, M.D., Dept. of urgery.

ermatology Conference
th Monday, 5:15 p.m., AHSC, Contact: r. R. Friedman.

ermatology Rounds
eekly, Wednesday, 11:30 a.m., Contact: r. Lynch.

ar, Nose & Throat Conference
eekly, Wednesday, 4 p.m., Contact: Dr. S. oulthard

ndocrinology Seminar
eekly, Thursday, 12-1 p.m., Contact: r. Johnson.

mergency Medicine Grand Rounds
uesdays, 9 a.m., AHSC, Contact: r. Sanders.

i Pathology Conference
th Friday, 1:30 p.m., AHSC, Contact: . Paplanus.

i Radiology Conference
nd. & 4th Mondays, 7:30 a.m., AHSC, ontact: Dr. T. Hunter.

ead & Neck Tumor Management onference
eekly, Wednesday, 4:00 p.m., Contact: r. Murrell.

ematology-Oncology Clinical Conference
st & 5th Tuesdays, Noon-1 p.m., Rm. 505. Contact: S. Salmon, M.D., Dept. of nternal Medicine.

edical Grand Rounds
eekly, Wednesday, 12-1 p.m., AHSC, ontact: Dr. J. Smith.

orbidity/Mortality in E.M.
nd Tuesday, 9 a.m., AHSC, Contacts: rs. Hughes & Alcorn.

euromuscular Disease Conference
eekly, Friday, 11:30 a.m., Contact: r. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P.C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C.D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C.D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4-6 p.m., AHSC, Contact: Dr. J. Goldstone.

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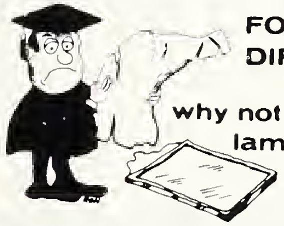

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ISSN 0004-1556)

JOURNAL OF ARIZONA MEDICAL ASSOCIATION

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Injectable Valium® (diazepam/Roche) ⒸIV

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindications: Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

> ***Usage in Pregnancy:*** **Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

ORAL Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

INJECTABLE *To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly, taking at least one minute for each 5 mg (1 ml) given; do not use small veins,* i.e., *dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea, have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, *i.e.*, phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

INJECTABLE Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

Adverse Reactions: Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

INJECTABLE Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

Dosage: Individualize for maximum beneficial effect.

ORAL *Adults:* Anxiety disorders, relief of symptoms of anxiety—Valium (diazepam/Roche) tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

Geriatric or debilitated patients: Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

Children: Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

INJECTABLE Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.)

For dosages in infants and children see below; have resuscitative facilities available.

I.M. use: by deep injection into the muscle.

I.V. use: inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., *dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children *administer I.V. slowly*; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

Management of Overdosage: Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

How Supplied:

ORAL Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

INJECTABLE Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.

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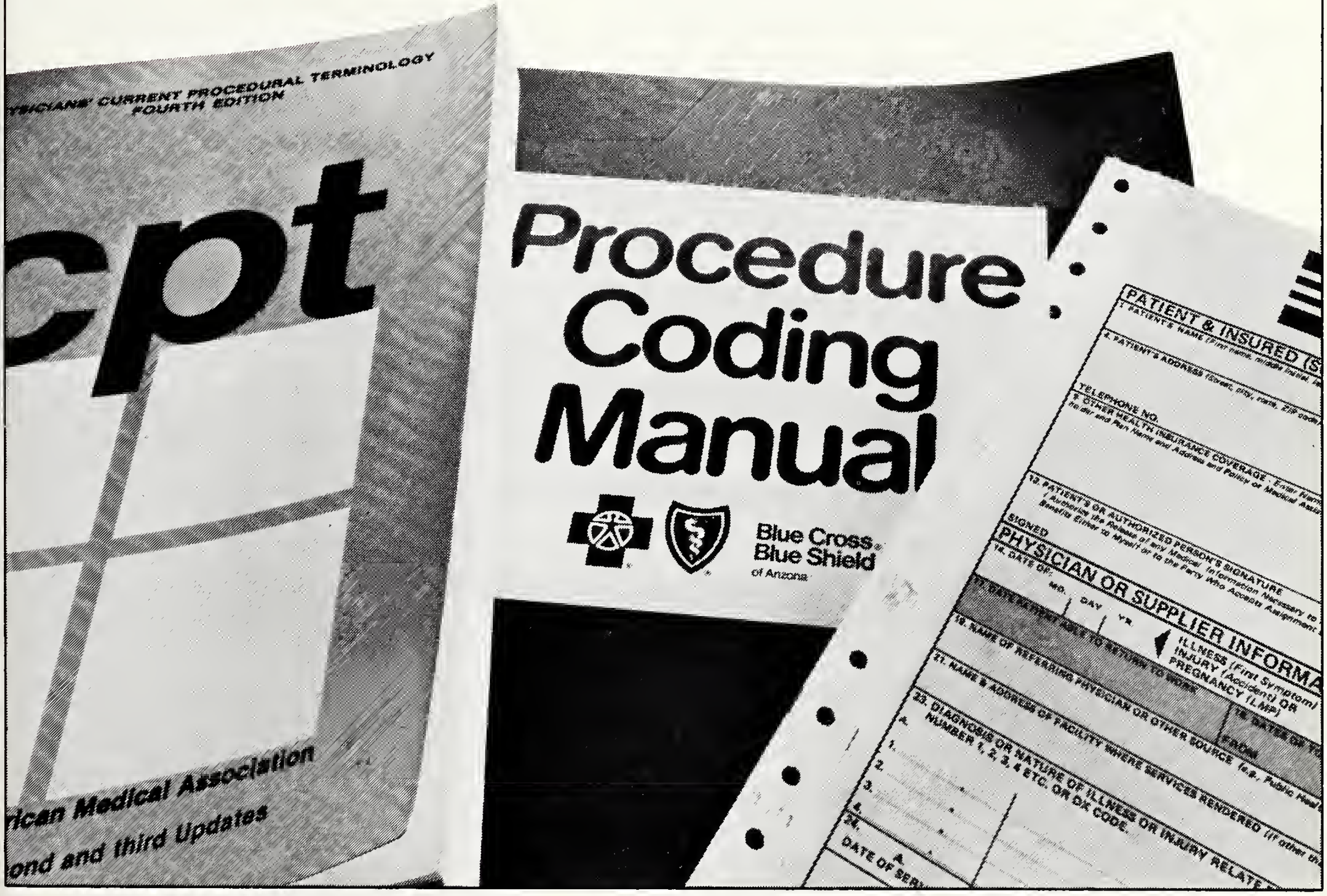

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...another well-known pair that work so well together! Ninety-five percent of colon/rectal surgeons surveyed added Tucks pads concomitantly to hemorrhoidal treatment programs.*

TUCKS
Pre Moistened Hemorrhoidal Vaginal Pads
Directions
Warning
Contains
PARKE-DAVIS
40 PADS
Anusol-HC®
Rectal Cream with Hydrocortisone Acetate
Caution: Federal law prohibits dispensing without prescription.
1 oz (28.4 grams)
PARKE-DAVIS
ANUSOL-HC
PULL APART

Anusol-HC®
Suppositories/Cream
with Hydrocortisone Acetate

*The #1 physician-prescribed product for hemorrhoids and other common anorectal disorders***

☐ Antiinflammatory, to relieve itch, pain, and edema.

☐ Astringent, to protect against further tissue damage.

☐ Emollient, for easier bowel movements.

And, when pain is a special problem, Anusol® Ointment offers the benefits of the topical anesthetic pramoxine HCl.

TUCKS® *Pre-Moistened Hemorrhoidal/Vaginal Pads*

*The #1 hemorrhoidal** pad for added external relief and gentle cleansing.*

☐ Soothes, cools, comforts, and cleanses irritated anorectal areas.

Once pain and inflammation subside, for dual action recommend regular ANUSOL® and TUCKS.®

Please see opposite page for brief summary of prescribing information.

*Meeting of Am Soc Colon/Rectal Surgeons, May 1980
**Data on file, Marketing Research Dept, Parke-Davis

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e-Moistened Hemorrhoidal/Vaginal Pads

emorrhoids and other anorectal uses — TUCKS extra-
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nder, inflamed, hemorrhoidal tissue. TUCKS are effective
eansing pads for everyday personal hygiene. Used on
uter rectal areas, they remove residue that can bring on
ore irritation Pads are premoistened with 50% witch
azel, 10% glycerin USP and de-ionized purified water
SP which acts as a cooling, soothing lotion to help com-
rt sensitive anorectal tissue.

ginal Uses — Comforting as an adjunct in postoperative
ıre after episiotomies and other vaginal surgery or when
lief from vaginal itching, burning or irritation is required.

NUSOL-HC® SUPPOSITORIES
emorrhoidal Suppositories with Hydrocortisone Acetate

NUSOL-HC® CREAM
ectal Cream with Hydrocortisone Acetate

autlon: Federal law prohibits dispensing without
escription.

escription: Each Anusol-HC Suppository contains hydro-
ırtisone acetate, 10.0 mg; bismuth subgallate, 2.25% bis-
uth resorcin compound, 1.75%; benzyl benzoate, 1 2%;
eruvian balsam, 1.8%; zinc oxide, 11.0 mg; also contains
e following inactive ingredients. dibasic calcium phos-
ıate, and certified coloring in a hydrogenated vegetable
l base

Each gram of Anusol-HC Cream contains hydrocortisone
etate, 5.0 mg, bismuth subgallate, 22.5 mg, bismuth
sorcin compound, 17.5 mg, benzyl benzoate, 12.0 mg;
eruvian balsam, 18 0 mg, zinc oxide, 110.0 mg; also con-
ıns the following inactive ingredients propylene glycol,
opylparaben, methylparaben, polysorbate 60 and sorbi-
n monostearate in a water-miscible base of mineral oil,
yceryl stearate and water

Anusol-HC Suppositories and Anusol-HC Cream help
relieve pain, itching and discomfort arising from irritated
ıorectal tissues These preparations have a soothing,
bricant action on mucous membranes, and the antiinflam-
atory action of hydrocortisone acetate in Anusol-HC
elps to reduce hyperemia and swelling

The hydrocortisone acetate in Anusol-HC is primarily
fective because of its antiinflammatory, antipruritic and
soconstrictive actions

dications and Usage: Anusol-HC Suppositories and
ıusol-HC Cream are adjunctive therapy for the sympto-
atic relief of pain, itching and discomfort in: external and
ternal hemorrhoids, proctitis, papillitis, cryptitis, and fis-
res, incomplete fistulas, pruritus ani and relief of local
ıin and discomfort following anorectal surgery

Anusol-HC is especially indicated when inflammation is
esent After acute symptoms subside, most patients can
maintained on regular Anusol® Suppositories or
ntment

ontraindications: Anusol-HC Suppositories and Anusol-
C Cream are contraindicated in those patients with a his-
ry of hypersensitivity to any of the components of the
eparations.

arnings: The safe use of topical steroids during preg-
ıncy has not been fully established Therefore, during
egnancy, they should not be used unnecessarily on
tensive areas, in large amounts or for prolonged periods
time.

ecautions: General: Symptomatic relief should not delay
finitive diagnoses or treatment.

Prolonged or excessive use of corticosteroids might
oduce systemic effects.

If irritation develops, Anusol-HC Suppositories and
ıusol-HC Cream should be discontinued until the infec-
ın has been adequately controlled

Anusol-HC is not for ophthalmic use

egnancy: See "WARNINGS"

diatric Use: Care should be taken when using the corti-
steroid hydrocortisone acetate in children and infants

osage and Administration: Anusol-HC Suppositories —
dults: Remove foil wrapper and insert suppository into
e anus Insert one suppository in the morning and one
bedtime for 3 to 6 days or until inflammation subsides
ıen maintain comfort with regular Anusol Suppositories

Anusol-HC Cream—Adults. After gentle bathing and
ying of the anal area, remove the tube cap and apply to
e exterior surface and gently rub in. For internal use, at-
ch the plastic applicator and insert into the anus by
pplying gentle continuous pressure Then squeeze the
be to deliver medication. Cream should be applied 3 or
times a day for 3 to 6 days until inflammation subsides
ıen maintain comfort with regular Anusol Ointment.

NOTE: If staining from either of the above products
curs, the stain may be removed from fabric by hand or
achine washing with household detergent.

ow Supplied: Anusol-HC Suppositories — boxes of 12
 0071-1089-07) and boxes of 24 (N 0071-1089-13) in
ver foil strips with Anusol-HC printed in black.

Anusol-HC Cream — one-ounce tube (N 0071-3090-13)
ith plastic applicator.

ore between 15° - 30° C (59° - 86° F).
89G010

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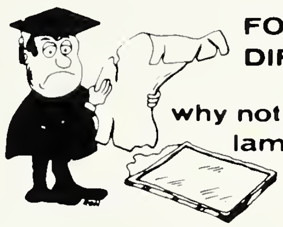

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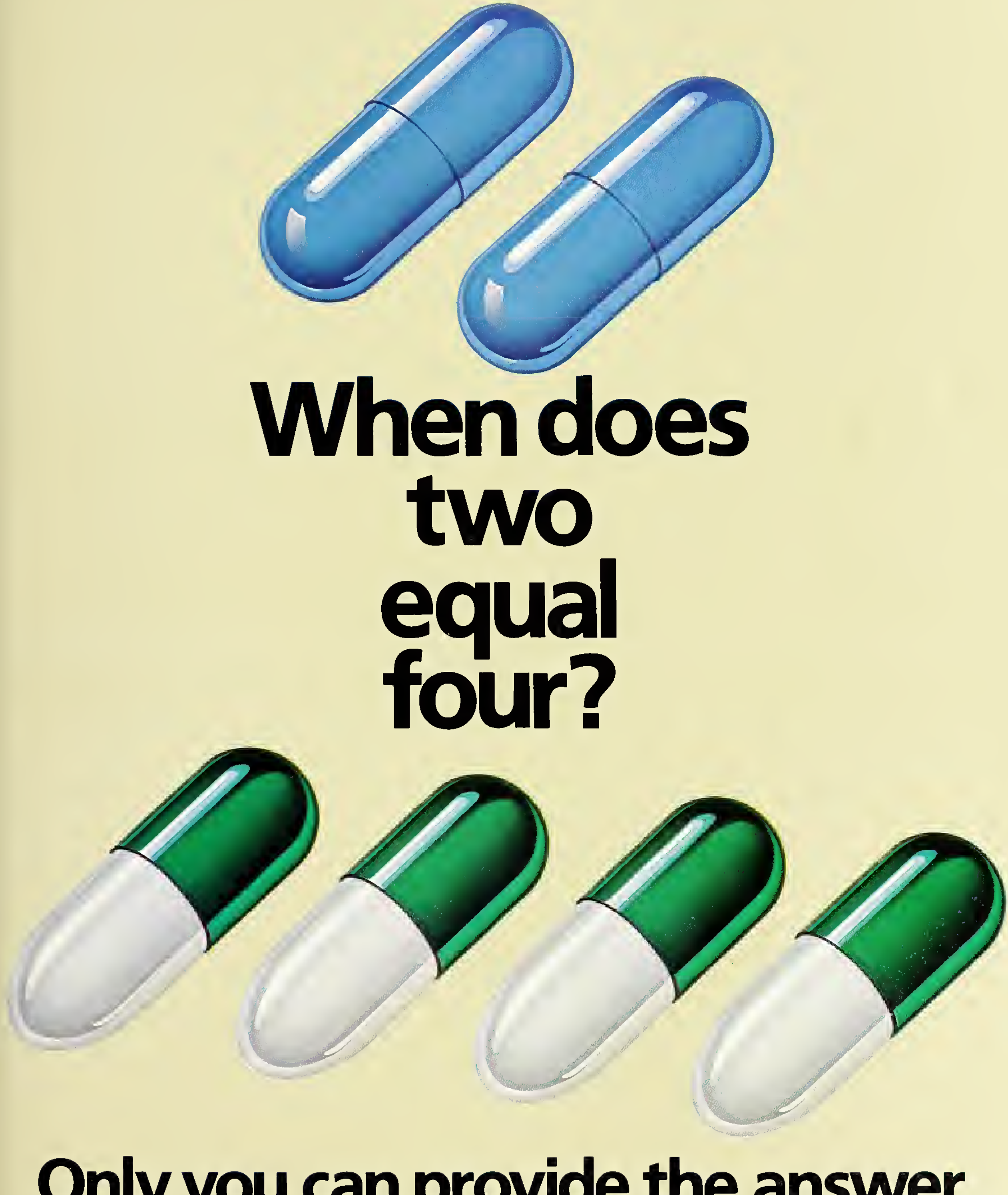
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Cephradine Tablets
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Cephradine for Oral Suspension USP

DESCRIPTION: Velosef '250' Capsules and Velosef '500' Capsules (Cephradine Capsules USP) provide 250 mg and 500 mg cephradine, respectively, per capsule. Velosef Tablets (Cephradine Tablets) provide 1 g cephradine per tablet. Velosef '125' for Oral Suspension and Velosef '250' for Oral Suspension (Cephradine for Oral Suspension USP) after constitution provide 125 and 250 mg cephradine, respectively, per 5 ml teaspoonful.

INDICATIONS AND USAGE: These preparations are indicated for the treatment of infections caused by susceptible strains of designated microorganisms as follows: Respiratory Tract Infections (e.g., tonsillitis, pharyngitis, and lobar pneumonia) due to *S. pneumoniae* (formerly *D. pneumoniae)* and group A beta-hemolytic streptococci [penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever; Velosef (Cephradine, Squibb) is generally effective in the eradication of streptococci from the nasopharynx; substantial data establishing the efficacy of Velosef in the subsequent prevention of rheumatic fever are not available at present]; Otitis Media due to group A beta-hemolytic streptococci, *H. influenzae,* staphylococci, and *S. pneumoniae;* Skin and Skin Structures Infections due to staphylococci and beta-hemolytic streptococci; Urinary Tract Infections, including prostatitis, due to *E. coli, P. mirabilis, Klebsiella* species, and enterococci *(S. faecalis).*

Note: Culture and susceptibility tests should be initiated prior to and during therapy.

CONTRAINDICATIONS: In patients with known hypersensitivity to the cephalosporin group of antibiotics.

WARNINGS; *Use cephalosporin derivatives with great caution in penicillin-sensitive patients since there is clinical and laboratory evidence of partial cross-allergenicity of the two groups of antibiotics; there are instances of reactions to both drug classes (including anaphylaxis after parenteral use).* In persons who have demonstrated some form of allergy, particularly to drugs, use antibiotics, including cephradine, cautiously and only when absolutely necessary.

Pseudomembranous colitis has been reported with the use of cephalosporins (and other broad spectrum antibiotics); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with antibiotic use. Treatment with broad spectrum antibiotics alters normal flora of the colon and may permit overgrowth of clostridia. Studies indicate a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis. Cholestyramine and colestipol resins have been shown to bind the toxin *in vitro.* Mild cases of colitis may respond to drug discontinuance alone. Manage moderate to severe cases with fluid, electrolyte and protein supplementation as indicated. Oral vancomycin is the treatment of choice for antibiotic-associated pseudomembranous colitis

produced by *C. difficile* when the colitis is severe or is not relieved by drug discontinuance; consider other causes of colitis.

PRECAUTIONS: General: Follow patients carefully to detect any side effects or unusual manifestations of drug idiosyncrasy. If a hypersensitivity reaction occurs, discontinue the drug and treat the patient with the usual agents, e.g., pressor amines, antihistamines, or corticosteroids. Administer cephradine with caution in the presence of markedly impaired renal function. In patients with known or suspected renal impairment, make careful clinical observation and appropriate laboratory studies prior to and during therapy as cephradine accumulates in the serum and tissues. See package insert for information on treatment of patients with impaired renal function. Prescribe cephradine with caution in individuals with a history of gastrointestinal disease, particularly colitis. Prolonged use of antibiotics may promote the overgrowth of nonsusceptible organisms. Take appropriate measures should superinfection occur during therapy. Indicated surgical procedures should be performed in conjunction with antibiotic therapy.

Information for Patients: Caution diabetic patients that false results may occur with urine glucose tests (see PRECAUTIONS, Drug/Laboratory Test Interactions). Advise the patient to comply with the full course of therapy even if he begins to feel better and to take a missed dose as soon as possible. Tell the patient he may take this medication with food or milk since G.I. upset may be a factor in compliance with the dosage regimen. The patient should report current use of any medicines and should be cautioned not to take other medications unless the physician knows and approves of their use (see PRECAUTIONS, Drug Interactions).

Laboratory Tests: In patients with known or suspected renal impairment, it is advisable to monitor renal function.

Drug Interactions: When administered concurrently, the following drugs may interact with cephalosporins:

Other antibacterial agents — Bacteriostats may interfere with the bactericidal action of cephalosporins in acute infection; other agents, e.g., aminoglycosides, colistin, polymyxins, vancomycin, may increase the possibility of nephrotoxicity.

Diuretics (potent "loop diuretics," e.g., furosemide and ethacrynic acid) — Enhanced possibility for renal toxicity.

Probenecid — Increased and prolonged blood levels of cephalosporins, resulting in increased risk of nephrotoxicity.

Drug/Laboratory Test Interactions: After treatment with cephradine, a false-positive reaction for glucose in the urine may occur with Benedict's solution, Fehling's solution, or with Clinitest® tablets, but not with enzyme-based tests such as Clinistix® and Tes-Tape®. False-positive Coombs test results may occur in newborns whose mothers received a cephalosporin prior to delivery. Cephalosporins have been reported to cause false-positive reactions in tests for urinary proteins which use sulfosalicylic acid, false elevations of urinary 17-ketosteroid values, and prolonged prothrombin times.

Carcinogenesis, Mutagenesis: Long-term studies in animals have not been performed to evaluate carcinogenic potential or mutagenesis.

Pregnancy: Teratogenic Effects/Impairment of Fertility — Category B: Reproduction studies have been performed in mice and rats at doses up to 4 times the maximum indicated human dose and have revealed no evidence of impaired fertility or harm to the fetus due to cephradine. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

Nursing Mothers: Since cephradine is excreted in breast milk during lactation, exercise caution when administering cephradine to a nursing woman.

Pediatric Use: Adequate information is unavailable on the efficacy of b.i.d. regimens in children under nine months of age.

ADVERSE REACTIONS: Untoward reactions are limited essentially to G.I. disturbances and, on occasion, to hypersensitivity phenomena. The latter are more likely to occur in persons who have previously demonstrated hypersensitivity and those with a history of allergy, asthma, hay fever, or urticaria.

(continued on next page)

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(continued)

The following adverse reactions have been reported following use of cephradine: G.I. — Symptoms of pseudomembranous colitis can appear during antibiotic therapy; nausea and vomiting have been reported rarely. Skin and Hypersensitivity Reactions — mild urticaria or skin rash, pruritus, joint pains. Blood — mild transient eosinophilia, leukopenia and neutropenia. Liver — transient mild rise of SGOT, SGPT, and total bilirubin with no evidence of hepatocellular damage. Renal — transitory rises in BUN have been observed in some patients treated with cephalosporins; their frequency increases in patients over 50 years old. In adults for whom serum creatinine determinations were performed, the rise in BUN was not accompanied by a rise in serum creatinine. Others — dizziness, tightness in the chest, and candidal vaginitis.

DOSAGE: Adults — For respiratory tract infections (other than lobar pneumonia) and skin and skin structures infections: 250 mg q. 6 h or 500 mg q. 12 h. For lobar pneumonia: 500 mg q. 6 h or 1 g q. 12 h. For uncomplicated urinary tract infections: 500 mg q. 12 h; for more serious UTI, including prostatitis, 500 mg q. 6 h or 1 g q. 12 h. Severe or chronic infections may require larger doses (up to 1 g q. 6 h.).

Children over 9 months of age — 25 to 50 mg/kg/day in equally divided doses q. 6 or 12 h. For otitis media due to *H. influenzae:* 75 to 100 mg/kg/day in equally divided doses q. 6 or 12 h but not to exceed 4 g/day. Dosage for children should not exceed dosage recommended for adults. There are no adequate data available on efficacy of b.i.d. regimens in children under 9 months of age.

For full prescribing information, consult package insert.

HOW SUPPLIED: 250 mg and 500 mg capsules in bottles of 24 and 100 and Unimatic® unit-dose packs of 100. 1 g tablets in bottles of 24. 125 mg and 250 mg for oral suspension in bottles of 100 ml and 200 ml.

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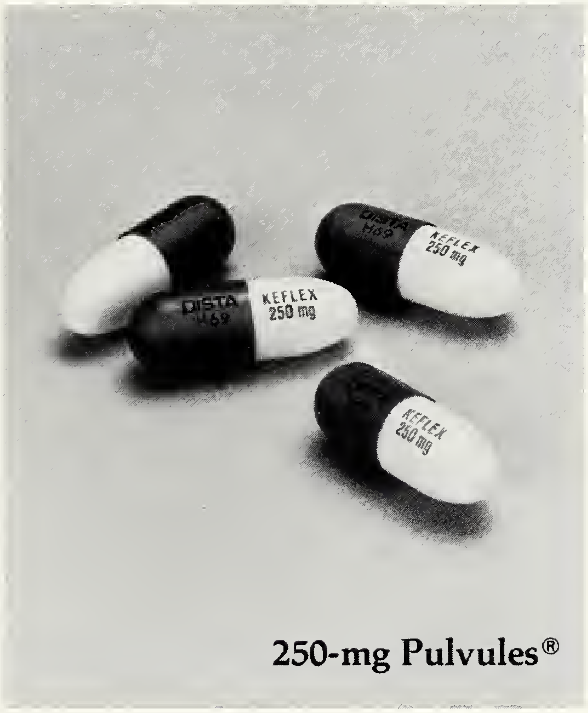

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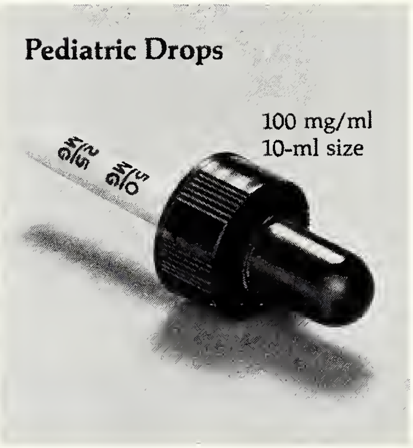

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rovide a way in which Arizona's physicians can peer-
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age ideas are introduced and doors to communication
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As ideas in these issues of *Arizona Medicine* intrigue and stimulate, the faculty would hope that they could be called upon to visit your institutions and further share their expertise and knowledge. One of the best ways of finding speakers for programs is to review the medical literature by topic. One can then select those authors who have unique material to offer for specific needs in local programs. From the display of material in these pages of *Arizona Medicine* there is substantial 'grist for the mills' of continuing medical education in the health care institutions in our state. Please call upon us. The College community of scholars is committed.

Louis J. Kettel, M.D.
Dean
College of Medicine

Cardiac Transplantation, Some Practical and Philosophical Aspects

Jack Copeland, M.D.

Cardiac transplantation refers to total heart replacement with a donor heart in the normal (or orthotopic) position. The current procedure has evolved from a series of canine experiments dating back several decades. The first human heart transplantation was performed in December 1967; since then there have been more than 500 procedures worldwide. Unfortunately, many heart transplants done during a wave of enthusiasm in 1968 involved physicians inexperienced in the laboratory phases of transplantation and unprepared for the rigors of postoperative therapy. Subsequently, several centers continued the effort of human cardiac transplantation, initially as a clinical investigation and then as a clinical service. Most of the current state-of-the art is the result of work done at Stanford University, where over 200 heart transplants have been completed and the bulk of statistical information accumulated. The question of whether cardiac transplantation is an experimental procedure can thus be addressed with the benefit of a large amount of data relating to diagnostic methods, protocols for therapy, and survival rates.

In modern scientific terms an experiment is a test of an hypothesis, the outcome being unknown. Using t
definition, is cardiac transplantation experiment
Since 1974, the one-year survival rate for heart tran
plantation at Stanford University has been 65 perce
and the five-year survival of 40 percent. At our progra
at the University of Arizona, now 43 months old, t
one-year survival rate is 67 percent. One-year survival
other centers is 40 to 60 percent. The outcome of t
procedure, therefore, is predictable within limits. Pr
tocols for initial therapy and management of acute a
chronic rejection are well-defined and to a large exte
have been adopted at other institutions. Diagnosis
acute rejection, by evaluation of electrocardiograph
voltage, endomyocardial biopsy, t-lymphocyte coun
and physical examination for signs of heart failure
standard at all major centers. Finally, many insuran
companies, as well as U. S. governmental funding age
cies including the Veterans Administration Hospita
Champus and Medicare, have funded cardiac transpla
procedures. It is inappropriate, therefore, to lab
cardiac transplantation as experimental. It has reache
the stage of clinical investigation and is a recognize
operation with clear-cut indications, predictable result
and established methods of postoperative care.

Candidates for the procedure, who have been r
ferred from all over the United States and the world, a
not told that they will be subjected to an experiment

From Surgery Department, Section of Cardiothoracic Surgery, University of Arizona Health Sciences Center, 1501 North Campbell Avenue, Tucson, Arizona 85724.

ocedure; they are told that they will undergo a
cedure with a predictable chance of survival. Prior to
operation, they are informed of the current state-of-
art of cardiac transplantation. Prior to referral their
ernists and surgeons give them the best available
ice on alternatives and discuss the prognosis of each
ernative. Generally these patients have been on a
atment regimen of maximal medical therapy using
h clinically approved and investigational drugs to
intain cardiac function and minimize the effects of
dstage cardiac failure. They have reached functional
ss IV (New York Heart Association) and are experi-
cing symptoms of cardiac failure at rest. Severe heart
ure has been documented by numerous tests, in-
ding cardiac catheterization, and prognosis for sur-
al without transplant is 6 to 12 months, perhaps less. If
e patients meet all of the criteria for endstage
diomyopathy and have no contraindications, they are
ormed of the risks of the procedure, the current
vival rates, and the life-style they can expect post-
eratively. The life-style is not normal; it is a Spartan
m of existence which includes strict medication
edules and personal responsibility for documenting
anges in vital signs and electrocardiographic voltage.
ssible complications are discussed, including acute
ection, infection, steroid toxicity, and the other
inful experiences and setbacks which may occur.
rrent costs of the procedure and available means to
et these costs are reviewed in detail with the patient.

ient Selection Criteria

f it is accepted that cardiac transplantation is a
nically reasonable and necessary procedure for
propriately chosen and well-informed patients, then
e should ask under what circumstances this pro-
dure should be withheld from any patients dying of
art failure and whether exclusion of patients is
tified. Exclusion criteria have evolved since the first
nical experience in late 1967. Initially, it was thought
at most patients with terminal heart disease were
ndidates for cardiac transplantation. Subsequent
perience demonstrated, however, that elevated pul-
onary vascular resistance (greater than 8 Wood units),
ulin-requiring diabetes mellitus, and concurrent life-
niting disease such as chronic obstructive pulmonary
sease were absolute contraindications to cardiac
nsplantation because of the predictable death or
mplications from these problems. It was also learned
at heart transplant patients over 55 years of age had a
uch poorer prognosis compared to younger patients
d that patients with addictions such as alcoholism
uld not satisfactorily comply with rigid treatment
otocols. Therefore, some patients must be excluded
om this procedure because it offers them no real
provement in prognosis.

Other exclusion criteria are debatable. A patient's
ychological stability can be approached through
sting, including intelligence quotient, personality
ofiles, etc., and by interviews, but definite exclusion
teria remain elusive except in patients with schizophrenia or severe mental retardation. The ideal heart recipient should have a supportive person or persons available for at least six months following transplantation. While this is highly desirable, it would be difficult to exclude a patient who did not have strong social support. And finally, if cardiac transplantation is accepted as a life-prolonging therapy for selected individuals, withholding such therapy from good candidates for financial reasons raises major ethical questions.

Organ Procurement

After approval as a potential recipient, the patient must await a suitable heart donor. Such a donor, often under the age of 25 and otherwise healthy, has generally suffered irreversible brain damage resulting in a diagnosis of brain death. The question of brain death was first addressed in 1968 by a committee of physicians at the Harvard Medical School who were concerned primarily with the problem which advanced technology for critical care presented to brain-damaged patients. The primary concerns of the committee were prolongation of organ function with no hope for return of brain function, the financial and psychological burden on the family, and the time and energy demands on hospitals and their staffs. A number of criteria were proposed by which brain death could be declared, and these criteria and subsequent modifications have formed the basis for our current recognition of brain death. The brain-dead individual is unreceptive and unresponsive, unable to breathe, and without cranial nerve reflexes. He must have a history which is compatible with causing irreversible brain damage, his temperature must be above 90° F, and there must be no evidence of high levels of drugs which could cause a comatose state such as barbituates in the bloodstream or urine. Ancillary studies which may be done but are not absolutely necessary for the diagnosis of brain death include electroencephalogram, radionuclide brain scan, computed axial tomographic scanning, and cerebral angiography. In our own city of Tucson, Arizona, approximately 100 potential donors become available each year. The number of donor referrals for organ transplantation, however, is only about five. The reasons for this are multiple. Physicians fear charges of conflict of interests from the grieving family of a tragically brain-injured person. These physicians are, after all, committed to use their skill and knowledge to reverse the damage which has occurred and to return the patient to normal function; it is hardly their role to suggest organ donation immediately after seeing a brain-dead patient and when credibility and a working relationship with family members may not yet exist. Neither is it, nor should it be, the responsibility of the transplanting team to solicit organs from brain-dead patients, since the diagnosis of brain death must first be made, and only then should the transplant team be notified. Therefore, in many cases the possibility of organ donation is first expressed by the family and not by the physician caring for the patient. The donor is cared for by members of the neurosciences team until such time as brain death has been declared and the desire for organ donation has been expressed. At that time, the transplant team may ethically step in to continue care of the donor with the goal of donor organ maintenance.

Legal Problems

Part of the heart procurement process is discussion with the donating family or relatives of the transplantation procedure and the nature of the donation. A clear statement that there is no obligation of any kind on the part of the recipient to the donor family is made.

Procurement or removal of the donor heart may also involve problems with other subspecialists. In particular, the anesthesia team which cares for the donor during donor organ removal must be certain that it is free from any liability for participation in the procurement process. The responsibility for the procurement lies with the transplanting surgeons. In two cases in the past—one when the organ donor's family was not available to give permission, and another when the organ donor was a victim of a homicide—transplant surgeons were charged with murder for procurement of organs. In both cases, there was overwhelming judicial opinion that brain death had been suffered prior to organ procurement and that the transplant surgeons were not guilty of murder. The importance of communicating directly and freely with the organ donor's family and the county coroner, however, is obvious. Since organ donation after the time of brain death is not a financial responsibility of the donor's relatives, there is no obligation after the care of the patient has been transferred to the transplant team. The cost of obtaining the donor organ is generally passed on to the recipient, and, in cases where the donor organs are removed but cannot be used for transplantation, the cost is generally borne by the hospital at which transplantation procedures are performed.

Costs

The overall cost of cardiac transplantation has been high, the range varying from one institution to another. At our own hospital the total cost of hospitalization and early convalescence has been approximately $43,000. The average duration of hospitalization posttransplant has been 52 days. The cost of the subsequent months, which comprise the first year following transplantation, has been $14,000 to $15,000, and for later years between $5,000 and $10,000. In many cases the cost has been paid by insurance companies, Medicare, the Veterans Administration, and Champus. In a few instances money has been raised through public benefits, and occasionally patients have had assets enough to cover their own costs. The cost of cardiac transplantation might be lowered drastically if the peroid of intensive observation and the number of diagnostic tests were decreased; however, heart transplant surgeons must balance the cost against the patient's well-being and the need for close observation in the early postoperative period. The compromise at the present time is to hospitalize the patient for 45 to 60 days after transplantation. Most of the complications of heart transplantation will be seen in t first three postoperative months.

Third Party Payment

Whether it is the responsibility of Medicare to pay this procedure in Medicare eligible patients is a questi similar to that raised by all catastrophic illnesses whi generate high costs. The issue of Medicare coverage heart transplant procedures was tested in court by o patient from the Arizona Health Sciences Center. administrative judge found that cardiac transplantatic as currently practiced, was both "reasonable and nece sary" and therefore appropriately funded by Medica In addition, he volunteered the opinion that he transplantation should be covered in any hospital wi adequate staffing and experience to perform t procedure. Since that time, nevertheless, there has be no Medicare funding of heart transplantation; inste the government has contracted a private resear foundation to evaluate the entire procedure in a pr spective, two-year study. The government desires objective assessment of heart transplantation its resu and its cost-effectiveness to help funding agenci answer the question of whether and how cardi transplantation should be funded over the next decad The outcome of this study, and the decisions made the basis of it, should have a major effect upon bo governmental and nongovernmental insurers.

Summary

Many facets of cardiac transplantation are as much and philosophy as they are science. Considerable stati tical data suggests that heart transplantation is n experimental; rather that it is an established treatme for suitably selected patients. Such patients, prope informed about the possible consequences and lif style changes resulting from cardiac transplantation, a able to make rational decisions regarding their can dacy as recipients. Not all patients can be potenti recipients because of absolute contraindicatio However, other less well-established exclusion crite may currently exclude some patients who could bene from the procedure. Organ donation, one of the maj bottlenecks for heart transplantation, is poorly unde stood by the public and is difficult to approach for t physicians in charge of patients with irreversible bra damage. Charges of solicitation, conflict of interest, a recipient obligations by the donor family may arise organ donation is not well formalized. Since the legali of organ procurement may be questioned, commu cation with coroners responsible for postmorte examination is mandatory. The cost of heart tran plantation is high, and the question of who shall pay f very expensive illnesses has been raised. Despi considerable data to suggest that heart transplantatio cost-effective, the government has decided to inves gate this question using a nonbiased research found tion. The outcome of this and other investigations w have profound effects upon the future financing a availability of heart transplantation.

aging Laparotomy for Hodgkin's Disease

go V. Villar, M.D.
omas M. Grogan, M.D.

stract

Hodgkin's disease is a malignancy of the lympho-
icular system. It is a proliferation of neoplastic
eticulum" cells, the so-called Reed-Sternberg cells
h admixed normal reactive lymphocytes. Initial
ead is usually by contiguous lymphatic spread.
bsequent spread may be vascular. Accurate clinical
ging is imperative to determine the phase and
tribution of disease and proper treatment. The role of
surgeon is to provide an adequate amount of tissue
insure proper diagnosis and to assess the extent of the
ease below the diaphragm (staging laparotomy).
ging laparotomy consists of biopsy of the liver,
enectomy and biopsy of the para-aortic lymph nodes.
should be done only if the results of the surgical
ocedure will influence the choice of treatment. It is
ost commonly indicated in Stage IIB Hodgkin's disease
ere the risk of Hodgkin's involvement below the
aphragm is higher. A team approach consisting of the medical oncologist, the diagnostic radiologist, the surgeon, the specialized hemopathologist and the radiotherapeutist assures patients the best chances for accurate diagnosis and long-lasting treatment.

Key Words: Staging laparotomy, Hodgkin's disease

The Lymphoreticular System

In the last decade, there has been greater understanding of the function and origin of the cells of the lymphoreticular system through advances in the fields of immunology, cytochemistry and electron microscopy. The cells of the lymphoreticular system have been divided into three major groups: B lymphocytes, T lymphocytes and the cells of the monocyte/histiocyte/reticulohistocytic series. These cell populations may be recognized and differentiated by specific cytochemical and immunological characteristics. Probably all lymphocytes are derived from the bone marrow stem cells. Subsequently, the lymph node population differentiates into two major groups, the thymus dependent or T lymphocytes that will undergo differentiation in the thymus gland and the thymus independent or B lymphocytes.[1-3] Lymphocytes are mobile, B lymphocytes

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m: Department of Surgery and Pathology, University of Arizona
alth Sciences Center. Reprint requests to Hugo V. Villar, M.D.,
partment of Surgery, University of Arizona Health Sciences Center,
son, Arizona 85724.

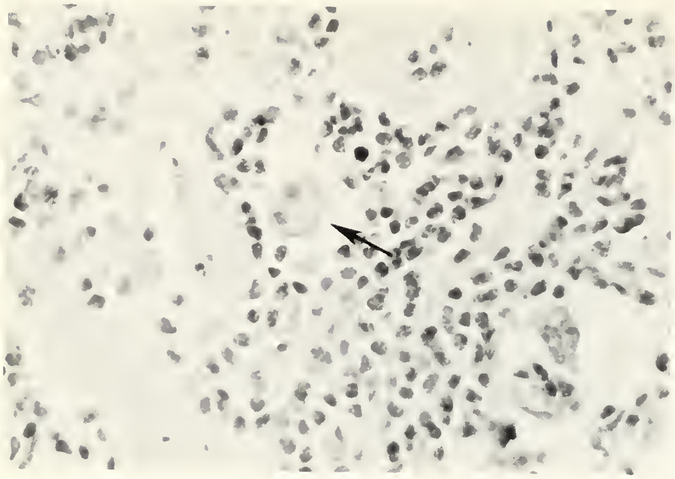

Figure 1
Microphotograph of a lymph node of a patient with Hodgkin's disease. At the center a diagnostic Reed-Sternberg cell (arrow) with mirror image nuclei, each containing a single prominent nucleolus.

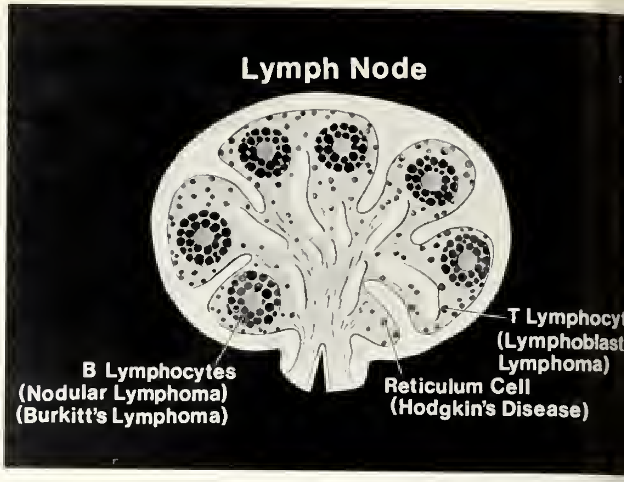

Figure 2
Diagram of a lymph node showing main anatomic functional areas. Germinal centers are composed o lymphocytes; derived from this cell subpopulation is nod lymphocytic and Burkitt's lymphomas. T cells and reticu cells are in the pericortical area. Hodgkin's disease is belie to originate from a modified reticular cell in this locatio

will mostly locate within the germinal centers of the lymph nodes and T lymphocytes in the pericortical area. B lymphocytes are primarily involved in humoral immunity and will differentiate into plasma cells for the production of antibodies. On the other hand, T lymphocytes are involved in cellular immunity and regulation of the antibody production by B lymphocytes.[4] The cells of the monocyte/histiocyte/reticulohistiocytic series are mostly involved in the processing of antigens, and they interact with the B lymphocytes in this function. They have a strong phagocytic capacity and contain large amounts of cytoplasmic lysosomal enzymes.[5] Understanding the disorders of the lymphoreticular system requires the addition of sophisticated immunologic and cytochemical studies to complement the regular light microscopy.

A diagram of a lymph node (Figure 1) illustrates some of the pertinent anatomic and functional areas. The cortical area is on the periphery with sinuses insinuating into the paracortical area. The germinal centers are in the cortex and are composed mostly of B lymphocytes; derived from this subpopulation of B lymphocytes are nodular lymphoma and Burkitt's lymphoma. The T lymphocytes and "reticulum" cells fill the paracortical area. Lymphoblastic lymphoma derives from T cell precursors. Hodgkin's is believed to derive from "reticulum or reticulohistiocytic" cells. All the malignant lymphomas mentioned including Hodgkin's may be regarded as clonal expansions of the normal anatomic and functional components of the immune system.[1]

Hodgkin's disease is a primary lymph node malignancy which comprises a mixture of neoplastic "reticulum" cells (Reed-Sternberg cells) and normal reactive elements. A diagnostic Reed-Sternberg cell is a large cell with two or more nuclei, each containing a prominent nucleolus. The nucleoli are typically large and round and often resemble inclusion bodies. (Figure 2.)

Initial spread of Hodgkin's disease is usually by cont uous lymphatic spread; subsequent spread may vascular. Accurate clinical staging is imperative determine the phase and distribution of disease.

Clinical Features

The common clinical course of a patient w Hodgkin's disease usually begins with a young m complaining of progressive enlargement of a group lymph nodes, usually cervical. Some generalized sym toms, the so-called B symptoms may be present. Th are fever, night sweats, chills and weight loss. They usually associated with more severe prognosis. Prur or alcohol intolerance with pain in the area of volvement may proceed discovery of an enlarged lym node by the patient.

Staging for Hodgkin's disease or evaluation of extent of the patient's disease prior to therapy standard in all institutions.[6-10] This information necessary in order to make proper decisions regardi treatment, either radiation therapy, chemotherapy o combined modality treatment. In addition, the results staging are used to compare different types treatment, and, finally, can be used as a data base for subsequent clinical restaging to determine if the patie is in complete remission or has a residual tumor that m require further treatment.[11]

Clinical staging includes careful history and physi examination, chest x-rays (and tomograms if neede bone marrow core biopsy, lymphangiogram and/or scan. Evaluation of the extent of disease for clini staging is done according to the Ann Arbor clas fication.[12] This classification is outlined in Table 1. Biop proven solid organ involvement is designated by letters "H" (liver), "S" (spleen), "M" (bone marro The suffix "A" means absence of systemic sympton Fever, night sweats and weight loss are noted in suffix "B."

Table 1
Staging Classification of Hodgkin's Disease

e I
lvement of a single lymph node region.
e II
lvement of two or more lymph node groups on the same of the diaphragm.
e III
lvement of lymph node groups on both sides of the hragm and spleen.
e IV
lvement of extralymphatic tissue or organs.
- Asymptomatic
- Clinical symptoms (fever, night sweats, etc.)
+ - Biopsy proven liver involvement
- Biopsy proven spleen involvement
+ - Biopsy proven bone marrow involvement

Role of Surgery

itially, the surgeon's role in the treatment of lgkin's disease is to provide biopsy material to allow specialized hemopathologist to make the correct gnosis of Hodgkin's disease. This usually involves psy of a cervical lymph node. The quality and dling of this biopsy are very important. An intact e is preferred and careful dissection is essential to d artifacts from crashing or undue traction. This ph node should not be placed in formalin but be d-carried to the hemopathologist to allow for her study. Cross-sections are made and fresh rints (touch preps) and surface marker studies are tinely done. Depending on the location of the lymph le, local or general anesthesia may be required. vical lymph nodes are normally deeper than they and important structures, vascular or neural, are ally in close proximity. A good incision, good lighting careful technique are required for safe removal of vical nodes.

he second involvement of the surgeon in the atment of Hodgkin's disease patients is in the luation of additional disease below the diaphragm. If diagnosis of a Stage II Hodgkin's disease volvement of two groups of lymph nodes above the phragm) is unclear or if the patient has bulky disease left supraclavicular lymphadenopathy, a staging arotomy may be requested by the oncologist to tter assess disease below the diaphragm. Staging arotomy consists of biopsy of both lobes of the liver edge and needle), splenectomy, and biopsy of the ra-aortic and ileac lymph nodes. (Table 2.)

Accurate assessment of the extent of the disease low the diaphragm has been an important ntribution to the management of patients with odgkin's disease. Staging laparotomy was first roduced in 1969 and since that time has become ndard in all of the institutions that treat these tients.[6-10,13] Lymphangiography can correctly detect volvement of ileac lymph nodes with 70% to 80% curacy. On the other hand, involvement of the para-rtic lymph nodes is difficult to access by lymphangiography.[14,15] The findings of a staging laparotomy are crucial in order to make proper decisions regarding treatment. The treatment of choice for Hodgkin's disease confined above the diaphragm (Stage I and II, A or B) is nodal radiation. Stage III (disease above and below the diaphragm) is usually treated by a combination of inverted Y shaped fields and chemotherapy. On the other hand, reducing the clinical stage from III to II (by a negative laparotomy) protects the patient from unnecessary overtreatment with chemotherapy. Finally, accurate knowledge of the lymph node areas involved allows the radiotherapist to better delineate the radiation fields. A splenectomy alleviates the need to include the left upper quadrant in the area to be radiated, thus reducing the risk of pneumonitis and nephritis. In addition, the spleen may be the only intra-abdominal organ involved with Hodgkin's disease. Staging laparotomy upstages the staging in about 25% of the cases and downstages in another 25%.[16-18]

Table 2
Staging Laparotomy

Liver Biopsy (wedge and needle)
Splenectomy
Biopsy of the para-aortic and ileac lymph nodes

Surgical Technique

Staging laparotomy is usually performed through a midline or supraumbilical transverse incision. In older, high risk, or obese patients we prefer the transverse incision. Biopsy of both lobes of the liver (wedge and needle) are routinely done. Any area of gross lymphoma involvement is biopsied. The first step in the splenectomy is ligation and division of the gastrocolic omentum. After the short vessels are divided, the splenic artery is isolated and ligated with a heavy suture material. Use of a heavy suture material is important to minimize tearing the intima of the arterial wall. Ligation of the splenic artery prior to exteriorization of the spleen minimizes blood loss and allows for a safer splenectomy. The next step involves division of the colosplenic and phrenosplenic ligaments. In general, the highest short gastric vessel is ligated after the phrenosplenic ligament is divided. At this point the spleen can be safely exteriorized, attached only by the splenic artery and vein. This technique, even though it is slightly time consuming, will minimize damage to the pancreas and allow ligation of the hilum with the tail of the pancreas in full view.

Biopsy of the para-aortic lymph node is done by retraction of the entire small intestine to the right and opening of the peritoneum laying on top of the aorta. The peritoneum is opened along the inferior mesenteric vein, from the left renal vein down to the bifurcation of the aorta. Care should be exercised to avoid damage to the ureter. This is particularly important if large lymph nodes are present. If the position of the ureter cannot be determined, it is safer to remove the lymph nodes between the *vena* cava and the aorta.

At the University of Arizona, we use a team approach consisting of the medical oncologist, the diagnostic radiologist, and the surgeon who jointly identify abnormal lymph nodes that must be biopsied. Intraoperative excision is confirmed by intraoperative radiographs and the tissue samples are handed personally to our hemopathologist. If there is any question of the adequacy of the specimen, a frozen biopsy is done to assure that adequate tissue has been removed for diagnosis. It is imperative that the surgeon performing a staging laparotomy is aware of the relevance of adequate tissue sampling so proper diagnosis can be obtained. It is critical that the tissue is not placed in formalin, but rather handed swiftly to the pathologist for fresh imprints and other immunological specialized studies. No metallic clips are used during the surgical procedure because they cause severe scatter artifacts in subsequent scanning of the abdomen.

Staging laparotomy is a major surgical procedure. The main complications of staging laparotomy are damage to the pancreas, postoperative bleeding and atelectasis. Infection with the development of a subphrenic abscess may occur. The late risk of a staging laparotomy, especially if total nodal radiation is given, is the development of a small bowel obstruction. From our own series of 75 patients who have undergone staging laparotomy or splenectomy for hematological diseases, we have had no mortality. Two patients have had pancreatitis that resolved with medical treatment and two have had small bowel obstruction requiring operative intervention.

Restaging or Posttreatment Laparotomy

Hodgkin's disease is presently one of the most successfully treated human neoplasms, however, in spite of optimal radiation therapy, chemotherapy or combined modality treatment, about 30% of the patients in complete remission will relapse within the first three years.[19,20] This short time of relapse after clinical remission suggests that undedected lymphoma was present at the time therapy was discontinued. Therefore, the concept of systemic restaging or careful reevaluation to detect occult lymphoma in patients in complete clinical remission is quite important. This is more relevant in high risk patients (extensive and bulky disease, extranodal involvement). Accurate restaging after completion of chemotherapy is important not only to determine those patients with remaining disease who may need additional treatment, but more importantly, to identify those patients with abnormal clinical staging, especially abnormal lymphangiograms and CT scans who are free of disease and require no further treatment. Restaging laparotomy for Hodgkin's disease is done in a similar way to staging laparotomy, i.e., including biopsy of both lobes of the liver, splenectomy, and biopsy of the para-aortic lymph nodes. Biopsy of the para-aortic lymph nodes is generally more difficult because of the extensive fibrosis present in the para-aortic area as a result of the combined treatment.

In summary, Hodgkin's disease is a malignancy of
lymphoreticular system which must be carefully
lineated by staging procedures to effect proper t
ment. Proper staging allows successful treatment in
80% of the cases. The role of the surgeon is to pro
adequate tissue samples for accurate diagnosis an
assess the extent of the disease below the diaphrag
team approach consisting of the medical oncologist
diagnostic radiologist, the surgeon, the speciali
hemopathologist and the radiotherapeutist ass
patients the best chance for accurate diagnosis and l
lasting remission.

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cturition Physiology in the Geriatric Patient

y D. Weiss, M.D.

ract

inary continence is maintained by a complex neu-
uscular system, and is affected by a variety of
ical conditions, disorders of mentation, and drug
effects. The detrusor muscle, which causes bladder
tying, is under the control of facilitative centers (in
sacral spinal cord and brainstem) and inhibitory
ers (in the frontal lobe and subcortical areas).
atric incontinence is most commonly due to impair-
t of the inhibitory centers, causing unstable bladder
rome. Defects in the facilitative centers in the sacral
or its peripheral nerves can cause an atonic blad-
problems higher in the cord result in an automatic,
x bladder.

e bladder sphincter system is also complex and
ends both on its autonomic innervation and its
omic position. Problems with anatomic relation-
s often manifest themselves as female stress inconti-
ce. The sphincter's autonomic innervation can be
cted by a wide variety of medications, which can
e both sphincter incompetence or urinary re-
ion.

ey Word: Urinary incontinence

oduction

rinary incontinence is a common condition which
irs in 10% to 15% of ambulatory geriatric patients.[1-3]
condition is probably more common among their
ents than physicians suspect, because patients
lly do not volunteer information about it and many
sicians fail to ask about it.

The neurophysiology of micturition is extremely complex and not fully understood. Urinary continence is maintained by an intricate neuromuscular system which involves the brain, spinal cord, bladder, and urinary sphincters. Each part must operate properly if urinary control is to exist. A wide variety of medical conditions, disorders of mentation, and drug side effects can disturb the system and the result will be urinary incontinence. The cause of the problem, however, is often unclear and appropriate diagnostic and therapeutic plans are not always obvious. In many patients, several etiologies are present at once, all of which contribute to the incontinence.

A detailed knowledge of the neurophysiologic processes involved in micturition is difficult to acquire, and probably unnecessary for the practicing physician. Nonetheless, in order to understand how various conditions and drugs cause incontinence, at least a conceptual understanding of micturition physiology is important. To this end, it is useful to simplify the system and divide the process into two broad areas. The first includes the detrusor muscle of the bladder and its control centers in the spinal cord and brain. This system is involved in the majority of cases of urinary incontinence in geriatric patients. The second area encompasses the sphincter mechanisms of the bladder neck, urethra and pelvic musculature.

The basic conceptal framework contained in this article will assist the physician in understanding some of the more common etiologies of incontinence. These include the unstable bladder syndrome (detrusor hyperreflexia) and incontinence due to drug side effects.

The Detrusor System

The urinary bladder is a distensible organ composed

: Department of Family and Community Medicine, University of
na Health Sciences Center, Tucson, Arizona. Reprint requests to
D. Weiss, M.D. 1450 North Cherry Avenue, Tucson, Arizona
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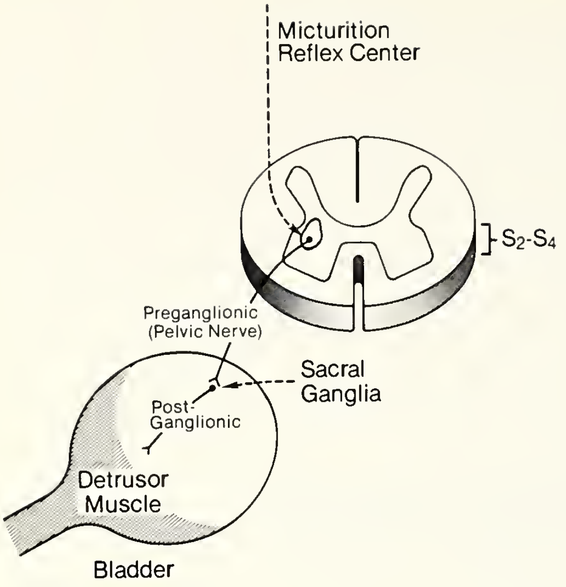

Figure 1
The Lower Detrusor System
The bladder detrusor is under the direct control of the micturition reflex center in the sacral spinal cord. Postganglionic neurons are cholinergic.

of three layers of smooth muscle. In the area of the bladder base these layers combine to form the detrusor muscle, which is responsible for initiating contraction and emptying of the entire urinary bladder.

The detrusor muscle receives its primary motor innervation from autonomic nerves originating in the micturition reflex center which is located in the grey matter of the second, third and fourth segments of the sacral spinal cord. Its neurons are preganglionic and the axons travel in the pelvic nerves (nervi erigentes) to the parasympathetic sacral ganglia, which is found within the wall of the urinary bladder. (Figure 1). The postganglionic fibers must then travel only the short distance from this ganglia to the detrusor muscle in order to complete the connection from the sacral detrusor nucleus to the bladder musculature. This innervation is cholinergic and it is the major neuronal input to the detrusor; its effect is to cause detrusor contraction. By interfering with this pathway, drugs with anticholinergic activity (e.g., tricyclic antidepressants) can impair detrusor contraction and cause urinary retention due to atonic bladder.

In addition to the cholinergic innervation of the bladder detrusor, recent research has suggested that endogenous prostaglandins may have a role in micturition physiology. Prostaglandins E$_2$ and F$_2$-alpha cause detrusor contraction in *in vitro* and *in vivo* systems, and these hormones are produced in large quantities by the various acinar cells of the urogenital tract.[4] Pharmacologic agents which inhibit the synthesis of prostaglandins can cause a marked decrease in detrusor contraction and, in theory, could cause atomic bladder.[5]

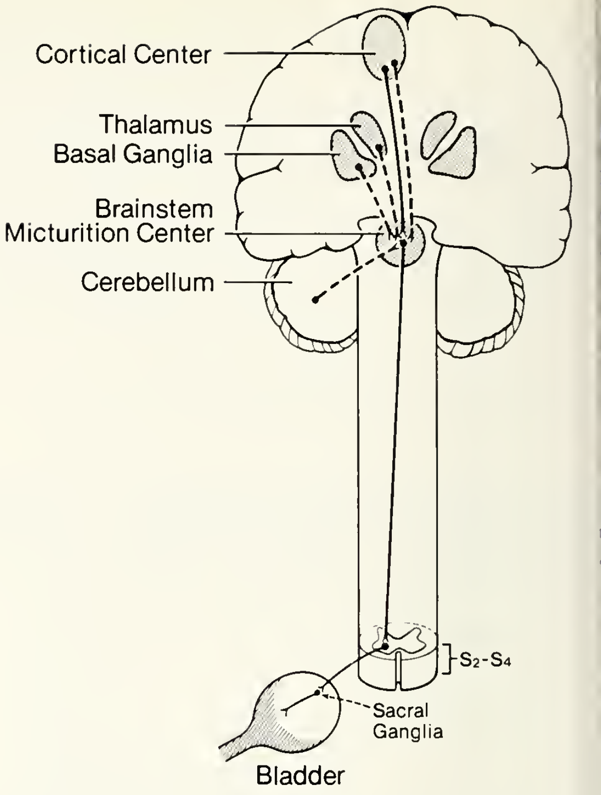

Figure 2
The Upper Detrusor System
The sacral micturition center is under the influence of
Brainstem Micturition Center which, in turn, rece
facilitative (solid lines) and inhibitory (broken lines) sig
from the cerebral cortex and subcortical centers.

Beta adrenergia fibers also innervate the detrusor
they are of limited clinical importance.

The detrusor nucleus in the sacral micturition re
center receives its own innervation from the micturi
center in the brainstem. Located in the locus ceruleu
the dorsal pons, this brainstem center sends facilita
axons directly to the sacral cord. It is from this brains
nucleus that the unconscious neurologic signal
detrusor contraction has its origin. (Figure 2.)

The neuronal output of the brainstem micturit
center is under the inhibitory influence of several ne
pathways. When the bladder distends with uri
proprioceptive impulses are carried to the brain via
reticulospinal and spinothalamic tracts of the spi
cord. These ascending fibers carry information ab
bladder fullness to both conscious and unconsci
centers of the brain. The unconscious centers
located primarily in the basal ganglia, thalamus,
midline cerebellar vermis. Neurons from each of th
areas, in turn, send inhibitory information to the bra
stem micturation center in the locus ceruleus, ther
allowing the bladder to fill while urination is inhibite
the brainstem level. (Figure 2).

Other ascending fibers terminate in the cere
cortex at the superior frontal gyrus, which is found in
medial portion of the frontal lobe, just anterior to

sorimotor strip. This is the center of conscious reness of bladder fullness and from this area, exci- of inhibitory commands can be willfully transmitted he brainstem micturition center. This area of the ntal lobe is the anatomical correlate of volitional trol of continence.[6,7]

should be noted that not all of the sensory fibers ending from the bladder travel the full distance to the instem and cerebrum. Some afferent fibers terminate ectly in the sacral micturition center to form a simple ex arc with the motor neurons of the detrusor leus. If this sacral center is deprived of the influence higher centers, such as occurs in spinal cord tran- tion, the simple reflex arc is capable of functioning its own. The result of such a cord lesion is an tomatic bladder," which will fill until afferent nerves ying information to the sacral cord about bladder ention cause activation of the detrusor nucleus, with ultant urination. In addition to spinal cord tran- tion, automatic bladder can be also seen with other d disorders such as multiple sclerosis and neoplasms, h of which have the ability to interrupt inhibitory al cord pathways. The contraction of the automatic dder tend to be discoordinated because the influ- es of the basal ganglia and cerebellum are lost and mplete bladder emptying with some residual urine occur.[8]

Detrusor System: Clinical Correlation

he most common cause of nonreversible geriatric ary incontinence is the unstable bladder syndrome. rusor hyperreflexia, irritable bladder and urge in- tinence are all synonymous terms. As many as 57% of ents seen in a geriatric incontinence clinic will be nd to have an unstable bladder.[9]

nstable bladder occurs because of a loss of inhibitory uence on the detrusor system by the various cerebral ters described above. Underlying etiologies can lude senile dementia, cerebrovascular disease, kinsonism, etc., but in most patients, a simple age ted loss of neurons in the inhibitory centers is the se.[10,11] Because involuntary inhibition is impaired, patient feels the urge to void when the bladder is ended with smaller than normal volumes of urine. ause voluntary inhibition is impaired, spontaneous ation occurs almost immediately after the urge to d first comes to consciousness. Thus, the patient ceives the urge to urinate at a small bladder volume then only when spontaneous urination is imminent limited time remains to get to a bathroom; inconti- ce will result.[12]

epression of the neurologic centers involved with turition inhibition is also the etiology of the in- tinence that occurs on a transient basis when men- on is impaired due to drugs (e.g., sedative hypnotics) medical illness (e.g., hypoxia, encephalopathy). airment of mobility, due to illness or hospitalization also result in incontinence if voluntary inhibition of turition is significantly impaired to the point that the ent cannot get to toilet facilities on time.

Another disorder of the detrusor system can occur when there is an abnormality of the sacral reflex micturition center itself (due to trauma, infarct, tumor, etc.) or of the nervi erigentes that emanate from it (e.g., diabetic neuropathy, syphillis).[9] The bladder is thereby cut off from any neurological stimulus to contract (atonic bladder), and it will fill with urine to maximum capacity until incontinence occurs by overflow. Atonic bladder is the cause of less than 10% of established incontinence in geriatric patients.[9]

The Sphincter System

The various sphincter mechanisms make up the second component of the micturition system. These sphincters include the urethral smooth muscle, the skeletal muscles of the pelvic floor, and in women, the anatomic position of the bladder neck. Although the sphincter mechanisms are important for maintaining urinary continence, the detrusor system described above is more central to the issue of incontinence in the elderly. Nonetheless, female stress incontinence, incontinence due to sphincter injury, and drug side effects involving the urinary sphincter are all seen in geriatric practice. While stress incontinence and sphincter injury are usually obvious, at least a simplified understanding of the complex sphincter mechanism is helpful in order to understand incontinence due to drug side effects. This paper will include a basic framework that will be useful to the practicing physician. The interested reader is referred to several excellent in-depth reviews of the urinary sphincter system and the autonomic innervation of the lower urinary tract.[13,14]

It is advantageous to simplify the system by considering that the angulation of the female bladder neck acts as a passive sphincter, and that the urethral smooth muscle and the skeletal muscles of pelvic floor are under active neurological control. The sphincters of the urethra and pelvic floor are under the control of the pudendal nucleus, which is found in the sacral micturition center, closely associated and integrated with the previously described detrusor nucleus.

The output of the pudendal nucleus is transmitted via the pudendal nerves S_{2-4} to the striated muscles of the pelvic floor and urogenital diaphragm and via the autonomic pelvic splanchnic nerves to the involuntary urethral sphincter.[15] In the resting, nonvoiding state, the baseline output of the pudendal nucleus keeps these sphincter tonically contracted. When the detrusor muscle contracts to cause bladder emptying, interneurons from the sacral detrusor nucleus carry inhibitory signals to the pudendal nucleus in order to silence its output. By this mechanism, the sphincters relax when the detrusor contracts. (Figure 3). Sphincter relaxation, therefore, is not a passive process in which pressure generated by bladder contraction overcomes an inert sphincter. This can be demonstrated by observation of the voiding bladder by contrast radiographic cystography. The urethra can be seen to dilate during detrusor contraction even if the bladder is drained by a suprapubic cathether.[16]

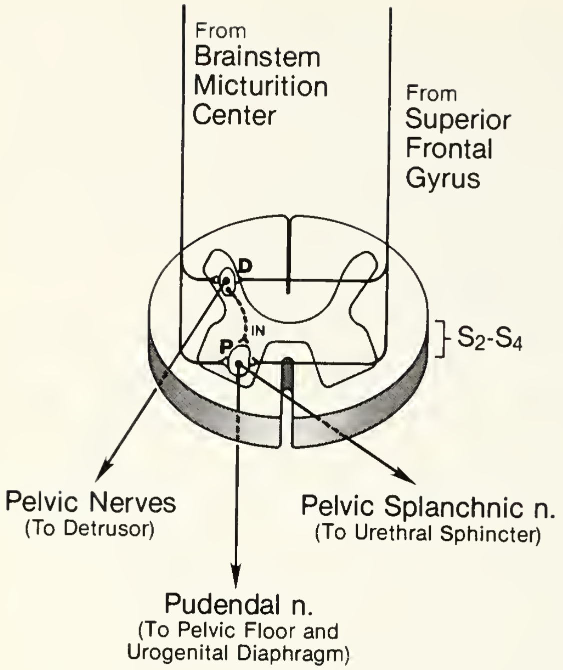

Figure 3
The output of the detrusor nucleus (D) causes bladder emptying. The output of the pudendal nucleus (P) is transmitted to sphincters to prevent bladder emptying. When detrusor nucleus is activated, inhibitory interneuron (IN) from detrusor nucleus will silence pudendal nucleus so the sphincter relaxation occurs.

The pudendal nucleus also receives innervation from the same higher centers as does the detrusor nucleus. The cortical areas of the superior frontal gyrus exert volitional control over the sphincter mechanisms. Axons of subcortical neurons in the pons, basal ganglia, cerebellum and thalamus project via the brainstem micturition center to the pudendal nucleus, providing unconscious "fine tuning" of the reciprocal inhibition of the pudendal nucleus by cells of the detrusor necleus. (Figure 3).

The innervation of the urethral sphincter involves adrenergic receptors. Both alpha and beta adrenergic receptors are present in the bladder neck and urethra, but alpha receptors are far more numerous. Stimulation of the alpha receptors, either by the sacral micturition center or pharmacologically (by drugs such as epinephrine, phenylephrine, ephedrine, or phenylpropanolamine), will cause contraction of smooth muscle and, therefore, closure of the sphincter. Beta receptors, on the other hand, respond with smooth muscle relaxation and opening of the urethral sphincter. Beta stimulatory drugs such as isoproterenol or terbutaline can be expected to decrease sphincter competence and beta antagonists, such as propranalol, will increase sphincter tone.[13]

The skeletal muscle component of the sphincter mechanism includes the pelvic floor muscles and muscles of the urogenital diaphragm. These striated muscles are in a tonic state of contraction due to t
output of the pudendal nucleus, from which th
receive cholinergic input via the pudendal nerve. T
cholinergic receptors of the striated muscle sphinct
however, are far outnumbered by those of the blad
detrusor. Therefore, the clinical effect of cholinergic
anticholinergic drugs on urinary continence is prima
due to their actions on the detrusor muscle, not t
sphincter. Anticholinergic drugs relax the detrus
muscle and can cause atonic bladder, with urin
retention and overflow incontinence.

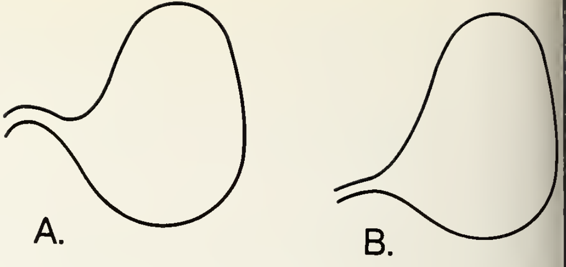

Figure 4
The Bladder Neck in Stress Incontinence
In the normal state, upward angulation of bladder neck
proximal urethra places these structures in a position to
compressed when intraabdominal pressure increases (A)
pelvic prolapse, bladder neck and urethra are displac
urethrovesical angle straightens and stress incontine
occurs. (B).

In women, the anatomic position of the bladder ne
also acts as a sphincter. It is best thought of, however
passive. The upward angulation of the bladder neck a
proximal urethra places them in such a position t
intraabdominal pressure will be transmitted to them
well as to the bladder. Therefore, the compressi
urethra will remain closed when intraabdomi
pressure increases during coughing, lifting, etc. If pel
soft tissue support is inadequate, the urethra w
descend and no longer will be in a position to rece
transmission of intraabdominal pressure. (Figure
Only the relatively small smooth muscle ureth
sphincter will remain to maintain continence. T
remaining sphincter is easily overcome by increases
intraabdominal pressure transmitted through t
bladder and stress incontinence will occur.[17,18] Desp
these explanations, it should be noted that the path
physiology of female stress incontinence is st
incompletely understood. Stress incontinence occurs
many women who have no history suggestive of a cau
for "pelvic floor weakening" (i.e., no history
childbirth). Approximately 40% of all women ha
occasional stress incontinence, many of whom a
nulliparous.[19]

The Sphincter System: Clinical Correlation

Sphincter malfunction in geriatric patients is mo
commonly due to female stress incontinence and dr
side effects. Stress incontinence is usually evident fro
history and physical examination. Interference wi
sphincter function by medications, however, is probab

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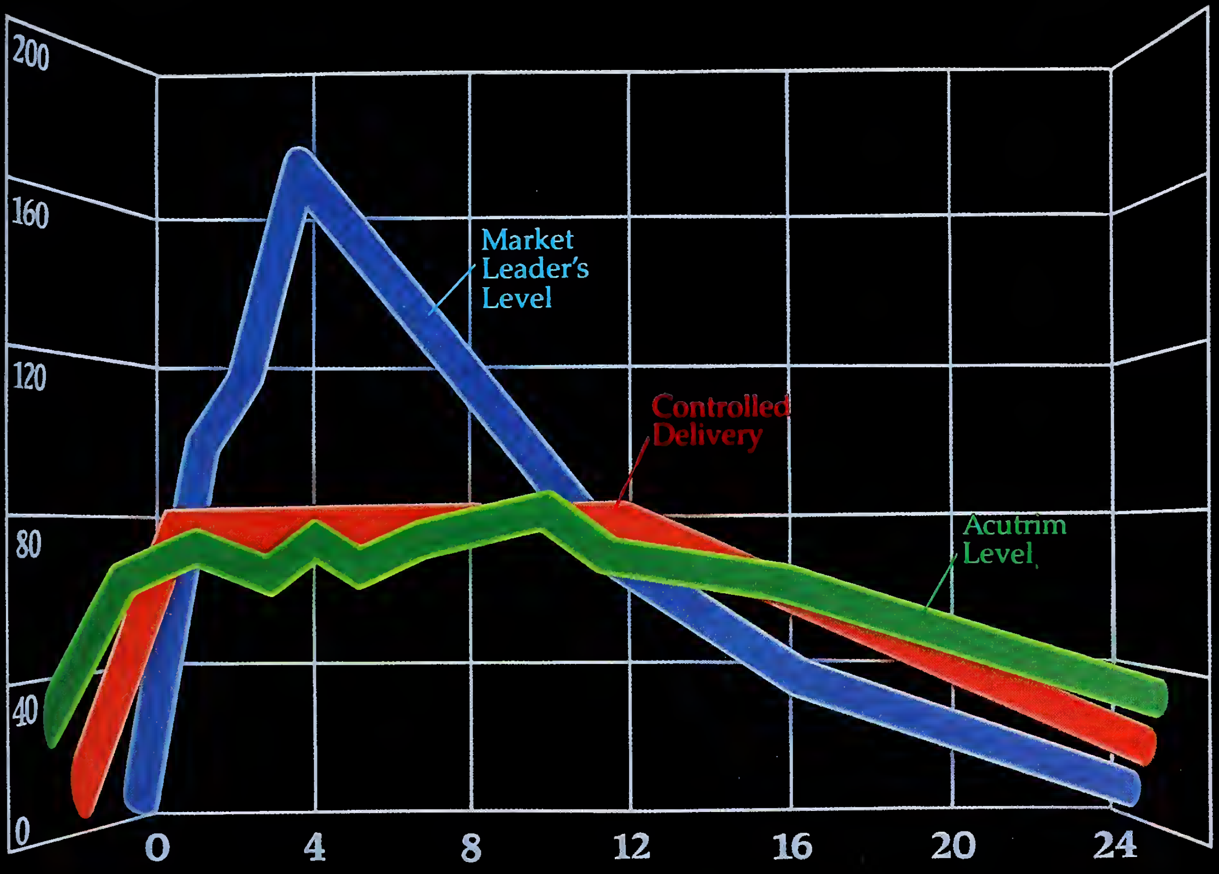

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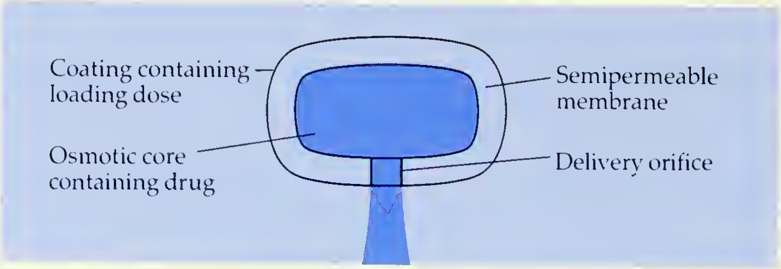

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derdiagnosed, even though it is common. Physicians en do not ask about it and patients do not volunteer e information.

Numerous over-the-counter medications, such as spiratory tract decongestants, contain alpha adrengic agents that can increase sphincter tone and cause inary retention. Beta adrenergic agonists, such as are ed for chronic obstructive lung disease (e.g., tertaline), can decrease sphincter competence. It is portant that the physician keep these various ssibilities in mind.

onclusion

Urinary incontinence is common in the geriatric population. A diversity of reversible and nonreversible nditions result in incontinence. With a knowledge of e neurophysiologic information provided in this icle, the physician will be in a position to understand e basis for some of the most common causes of continence, such as unstable bladder and incontince due to drug side effects.

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High Frequency Ventilation—Current Concepts

Stuart F. Quan, M.D.
Jerry M. Calkins, M.D., Ph.D.
Charles K. Waterson, B.S.E.
Charles W. Otto, M.D.

Abstract

High frequency ventilation (HFV) is an experimental method of ventilatory support which can achieve effective alveolar ventilation and oxygenation at rates between 60 and 2400 min^{-1} using low airway pressures and tidal volumes less than or equivalent to the anatomic dead space volume. In contrast to spontaneous or conventional mechanical ventilation where intrapulmonary gas transport occurs primarily by convective or bulk flow, enhancement of molecular diffusivity is thought to be the major mechanism responsible for gas transport during HFV. HFV is potentially useful in the operating room for bronchoscopy, laryngoscopy, and also for some thoracic and neurosurgical procedures. In the critical care setting HFV appears to be more effective than conventional ventilation where there is a large bronchopleural fistula. It also may prove to be of benefit in selected cases of infant or adult respiratory distress syndrome.

Key Words: High Frequency Ventilation, Positive Pressure Ventilation, Respiratory Failure.

Traditional principles of mechanical ventilation have assumed that tidal volumes and rates similar to those observed during spontaneous ventilation should be used whenever possible. Usually this implies tidal volumes of 10 to 15 ml/kg and ventilator rates less than 30 min^{-1}. In the past 15 years, however, adequate gas exchange at rates between 60 and 2400 min^{-1} using small tidal volumes and low airway pressures has been demonstrated to be feasible in both experimental animals and man.[1] This new approach to ventilatory support, termed high frequency ventilation (HFV), may be useful in reducing some of the potential adverse effects of conventional positive pressure ventilation (IPPV) such as circulatory depression and barotrauma, and may provide more effective ventilation than conventional methods. Since delivered tidal volumes are usually less than the anatomic dead space volume, some of the concepts used to explain intrapulmonary gas transport during spontaneous and intermittent positive pressure ventilation are not as applicable to gas exchange during HFV.[1] In this review we will outline

From: Department of Internal Medicine, Anesthesiology, and the Division of Respiratory Sciences, University of Arizona Health Sciences Center Tucson, Arizona, Reprint requests to Stuart F. Quan, M.D., Division of Respiratory Sciences, University of Arizona Health Sciences Center, Tucson, Arizona 85724.

some of the theoretical considerations and potential clinical applications of this new method of ventilation.

Historical Summary

Nearly 40 years ago, Draper and Whitehead[2] demonstrated that oxygenation of arterial blood could occur by diffusion alone. This method, however, could not effectively remove carbon dioxide. In 1955, Emerson suggested that gas exchange could be improved with high frequency oscillations applied at the proximal airway. Although Emerson was granted a patent for a high frequency ventilation device, there was little interest in this concept until 1970 when a group of Swedish investigators observed that alveolar ventilation could be maintained with small tidal volumes using ventilation rates greater than 60 min^{-1}.[1,3] Subsequently, Lunkenheimer demonstrated that effective gas exchange could result from oscillations applied at the airway with frequencies as high as 40 Hz.[1,3] Similarly, Klain and Smith observed that rapid pulsations of gas delivered by a small catheter at frequencies as high as 240 min^{-1} also resulted in efficient gas exchange.[1,3] With the impetus from these studies, interest in HFV has grown exponentially, and there is now a considerable amount of data relating to the technical aspects of various HFV delivery systems, mechanisms of intrapulmonary gas transport during HFV, and potential clinical applications.

Methods of Delivering HFV

A number of methods have been utilized to deliver HFV, and this has led to some confusion in the interpretation of published experimental data. To clarify this situation, a classification system based upon the mechanical technique used to deliver HFV is frequently used. Within this classification system there are three general categories. First is high frequency positive pressure ventilation (HFPPV) which employs a volume constant ventilator with a low compressible volume at frequencies up to 100 min^{-1}.[4] Second is high frequency jet ventilation (HFJV) where rapid small pulsations of gas are introduced into the airway via a small catheter or extra lumen incorporated into an endotracheal tube.[3] Entrainment of gas through the proximal end of the endotracheal tube usually occurs with this method. HFJV has been used at frequencies between 100 and 900 min^{-1}. Third is high frequency oscillation (HFO). With this method low amplitude oscillations are delivered to the airway by a piston or diaphragm pump at frequencies between 120 and 2400 min^{-1} (2 to 40 Hz).[1] A constant bias flow is introduced at the airway with this technique to deliver fresh gas and facilitate elimination of CO_2.

Although the techniques used to deliver HFV differ and the spectrum of frequencies used is wide, all of the methods appear to have three characteristics in common. First, effective gas exchange occurs at ventilatory frequencies higher than those found during spontaneous ventilation or during IPPV. Second, ventilation is accomplished using peak airway pressures lower than observed with IPPV. Third, tidal volumes used are very close to, or less than, the anatomic space volume.

Theoretical Considerations

The mechanisms by which HFV provides adequat exchange are not completely understood. With s taneous ventilation or IPPV, current concepts in piratory physiology indicate that intrapulmonar transport occurs by a combination of convection (flow) and molecular diffusion (kinetic energy de dent brownian motion). Normally, with inspiratic pressure gradient is generated between the prox airway opening and the distal gas exchanging are the lung. This results in convective flow of inspired g far distally as the terminal bronchioles (approxim the 17th generation of airways). At this point, consequence of the exponential increase in ai cross-sectional area produced by repeated air branching, the velocity of gas flow approaches z Hence, in the more distal small airways, gas flo thought to occur by molecular diffusion rather convection. Since with HFV, delivered tidal volume less than anatomic dead space volume, convection only account for a small portion of the obser movement of gas. Since molecular diffusion by its not adequate to provide for effective gas trans during HFV, it has been suggested that some mentation of molecular diffusivity must be pres Although gas transport via enhancement of diffusiv probably present in lower animals such as humn birds and panting dogs, the mechanism by which might occur during HFV in man has not been comple defined.

A number of mechanisms have been proposed wl may enhance diffusional processes in the airways du HFV. First, gas mixing is known to increase where airf is turbulent. HFV by providing high rates of gas flow increase airway turbulence and thus augment diffus by axial dispersion. Second, rapid airway movemer "shaking" produced by HFV may also improve mixing. In support of this hypothesis, airway movem produced by cardiac activity has been shown to enha gas transport presumably by augmenting diffusi Third, stroboscopic observation of the chest walls excised lungs of dogs have demonstrated areas of lung moving out of phase with each other during HF A necessary consequence of this finding is the prese of regional circulating gas currents in the distal s airways of the lung. These regional gas currents augment gas mixing and transport during HFV. L changes in the velocity profiles of gas flow in the airw produced by repeated airway branching during may also improve gas mixing.[7]

Recent theoretical concepts propose that gas tra port in the airways reflects a balance between c vection or bulk flow and diffusional processes (simpl augmented).[1,3] Although augmentation of diffus should be the primary mechanism responsible for flow occurring with the high frequencies and low t lumes used during HFO, the extent to which diffusion augmented with HFPPV or HFJV is not clear. With both ese methods of delivering HFV, frequencies are less bid than HFO, and tidal volumes are closer to the atomic dead space volume so that more convective w may be occurring. Recently, we have demonstrated at movement in the distal airways is minimal during JV.[8] This suggests that with HFJV, mechanisms other an convective flow are responsible for gas transport in all conducting airways. As a unifying hypothesis, it has en proposed that gas transport at relatively low ntilatory frequencies as used during HFPPV occurs marily by convection with only a small component of hanced diffusivity, but as ventilatory frequencies crease, enhanced diffusivity plays an increasingly portant role.[3]

tential Clinical Applications

Although HFV provides effective gas exchange at wer peak airway pressures, and in some clinical uations with less impairment of cardiac output than PV, its role in clinical medicine is still unclear. HFV has own promise, however, as being useful in certain erating room and critical care applications.

In a number of studies, HFJV and HFPPV have been ed successfully in ventilating patients undergoing esthesia for rigid bronchoscopy or direct laryngospy.[9] In both situations there is competition between e anesthesiologist and the surgeon for access to the rway. During bronchoscopy, HFJV and HFPPV elivered via the side arm of the bronchoscope, have een successful in providing effective ventilation.[9] With rect laryngoscopy, HFJV can be provided by placing a ansnasal catheter through the larynx without obstruction of the surgical field.[9]

Use of HFV may also be helpful in neurosurgery. uring craniotomies, air embolism is often a serious and otentially lethal complication. Experimental evidence ggests that HFJV may facilitate dissolution of air mboli within the pulmonary vasculature.[10] During icroscopic neurosurgery, brain movement occurring a result of IPPV often makes delicate surgery difficult. FV appears to minimize brain movement since trathoracic and hence intracranial pressure fluctuions are less during HFV than IPPV.[11]

Conventional mechanical ventilation during major rway surgery, such as sleeve pneumonectomies and acheal resections, is often associated with difficulty in roviding adequate alveolar ventilation and access to e surgical field. HFJV via small bore catheters in this inical situation results in effective ventilation without npairing access to the operative site.[12]

In infant respiratory distress syndrome (IRDS, hyaline embrane disease), mechanical ventilatory support is ften required until there is an improvement in lung aturity. Unfortunately, the high airway pressures enerated during conventional mechanical ventilation ave been implicated as an important factor in the evelopment of bronchopulmonary dysplasia in IRDS urvivors. Since peak airway pressures during HFV are generally less than IPPV, HFV may be a significant advance in neonatal ventilation. In a recent study of 24 infants with IRDS who were ventilated with HFPPV, 22 of 24 survived with few major complications.[13] Of even greater interest is evidence that HFV[14] and HFJV (Militzer HW, Quan SF, Calkins JM, et al, unpublished observations), when used in an experimental model of IRDS, can prevent hyaline membranes and provide more effective ventilation than IPPV.

HFV has been used in a small number of patients with ARDS. Isolated case reports and small uncontrolled clinical series have suggested that HFV may provide more effective ventilation than IPPV.[3] However, no large trials comparing HFV with IPPV have been performed. Furthermore, comparisons in experimental models of ARDS have not shown any clear advantage of HFV.[15,16] Therefore, although promising, the role for HFV in ARDS remains to be defined.

Depression of cardiac output during positive pressure ventilation is caused by a reduction of venous return to the heart. Impedence of venous return is related to elevation of mean intrathoracic pressure which is influenced by mean airway pressure. Although peak airway pressure is always lower with HFV than IPPV, mean airway pressure may be lower or higher or unchanged depending on the techniques and equipment used. There are HFV systems in use which routinely generate lower mean airway pressures than IPPV for similar levels of alveolar ventilation. These systems should provide an advantage over IPPV in maintaining hemodynamic stability. Limited animal studies have shown a higher cardiac output during HFPPV than IPPV.[17] In other studies, no difference was observed in cardiac output when normal dogs were ventilated with HFJV compared to IPPV.[18] However, when 15 cm H_20 PEEP was applied to simulate functional hypovolemia, cardiac output was higher during HFJV. Adequate clinical studies comparing cardiac output during HFJV to IPPV, however, are lacking.

One potential clinical situation where HFV appears to be particularly promising is in airway or pulmonary disruption in patients with acute respiratory failure. IPPV in such patients is limited by loss of a substantial amount of each tidal breath through the opening in the disrupted bronchus. Efforts to improve ventilation by increasing airway pressure or tidal volumes usually only result in more volume loss through the disruption. Application of HFV in this clinical situation appears to improve overall ventilation and promote closure of the disruption since effective ventilation can be accomplished using lower airway pressures than with IPPV.[19]

Last, HFV has been proposed as an effective method of ventilation during cardiopulmonary resuscitation. Studies in animals suggest that HFV delivered via a catheter inserted into the trachea via the cricothyroid membrane can provide adequate ventilation, and concomitantly prevent aspiration.[20] Although this may be a potentially useful application of HFV, clinical trials are necessary before widespread use.

Conclusion

In summary, HFV is a new experimental technique that provides effective ventilation at rates between 60 and 2400 min^{-1}. Airway pressures during HFV are generally lower than those observed with IPPV. The mechanisms by which effective ventilation is produced at such rapid rates are not completely understood, but are suggested to be related action to an augmentation of molecular diffusivity. The role of HFV in clinical medicine has not been completely defined. However, it may be potentially useful in some operating room and critical care applications.

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Microsurgical Revascularization of the Ischemic Brain:

Extracranial-Intracranial Bypass For Stroke Prevention

Alan S. Fleischer, M.D.
Richard P. Greenberg, M.D., Ph.D.

Abstract

Ischemic brain disease accounts for 80% of the h
million strokes occurring yearly in the population. Su
neurological symptoms as transient ischemic attac
(TIAs), prolonged reversible neurological defic
(PRND) and minor strokes are warning signs of bra
ischemia. Prevention of further TIAs and stroke is t
best form of therapy. We report the results of 1
extracranial-intracranial microsurgical bypass pr
cedures in 151 consecutive patients with cereb
ischemia. The occurrence of completed stroke in o
series following surgical revascularization of the bra
was six percent.

If untreated by carotid and/or ECIC bypass surge
60% of the patients with TIAs will have a stroke with
one year from presentation, and 40% of the surgica
untreated patients who present with minor stroke w
have a fatal stroke within three years of the initial ict

It appears from our preliminary studies and those
other groups that surgical intervention by well-train
teams of microvascular surgeons can benefit patie
with cerebral ischemia.

Key Words: Cerebral Ischemia, ECIC Bypass, Transie
Ischemic Attacks, Stroke, Microsurgical Revascul
ization.

From: Section of Neurosurgery, University of Arizona Health Scien
Center, Tucson, Arizona. Reprint requests to Alan S. Fleischer, M.
Department of Surgery, Section of Neurosurgery, University
Arizona Health Sciences Center, Tucson, Arizona 85724.

roduction

nadequate blood flow to the brain producing hemia and infarction is the cause of brain damage in proximately 80% of the almost 500,000 persons licted with stroke each year.[1] Hemorrhagic stroke due hypertension, ruptured aneurysms and arteriovenous alformations comprises the remaining 20%.[2] Ischemic oke is frequently preceded by a transient ischemic ack (TIA), a prolonged reversible neurologic deficit RND) or by a completed minor stroke. Up to 60% of tients with a TIA will have a completed stroke within a ar and 75% within three years of the first onset of TIA. e mortality rate of TIA patients with stroke is five rcent in the first year and 21% within four years. In tients with PRND 17% to 40% will die of stroke over a year period. The most dramatic warning sign, wever, is the completed stroke itself. Within three ars from the stroke 29% to 40% of the patients will have other stroke which proves fatal.[3] Stroke is not limited the elderly, as two-thirds of stroke patients are under e age of 65 and half of these are less than 55 years old.[2]

Since many ischemic strokes are preceded by warning ns, prevention is the most important form of therapy. rly treatment of vascular stenosis or occlusion in tients with premonitory signs of cerebral ischemia can duce the incidence of a completed stroke or recurrent oke. Approximately 65% of these patients have rgically accessible vascular disease of large vessels in e neck.[3] The remainder of patients at risk for stroke ve what may be inaccessible vascular lesions that nnot be primarily repaired surgically, e.g., internal rotid artery occlusion, intracranial internal carotid tery stenosis, middle cerebral artery stenosis and iddle cerebral artery occlusion. (Table 1.)

Fortunately, many patients with symptoms related to accessible vascular lesions may be treated by surgically passing the diseased vessels with an extracranial-tracranial (ECIC) anastomosis. This microvascular ocedure first performed in 1969 connects a scalp anch of the external carotid artery, the superficial mporal artery, with an intracranial branch of the iddle cerebral artery. Both vessels are about 1 mm in ameter.[4-10]

tients and Methods

Our series includes 175 consecutive ECIC bypass ocedures performed on 151 patients over seven years. tients averaged 59 years of age with 71% men and 29% omen in the group. Indications for surgery include 101 atients who had ECIC bypass because of internal rotid artery occlusion, either extra- or intracranial. wenty-four of these people had bilateral occlusions nd underwent bilateral ECIC procedures. Stenosis of e intracranial internal carotid artery was the cause of mptoms in 20 patients, middle cerebral artery stenosis as present in 16 and eight patients had middle cerebral tery occlusion. A giant middle cerebral artery neurysm or Moya-Moya disease accounted for an dditional six patients in our series.

Table
Inaccessible Lesions

Internal Carotid Artery Occlusion
  (A) Extracranial
  (B) Intracranial
Intracranial Internal Carotid Artery Stenosis
Middle Cerebral Artery Stenosis
Middle Cerebral Artery Occlusion

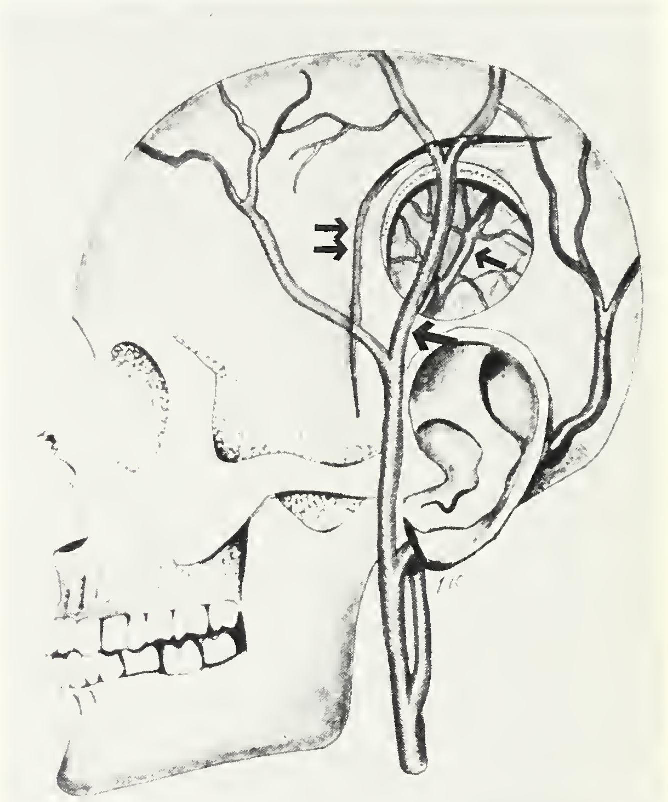

Figure 1
Anatomy involved in the ECIC bypass. Large arrow: superficial temporal artery (donor vessel). Double arrows: scalp incision. Small arrow: cortical branch of middle cerebral artery (recipient vessel).

The microsurgical technique used is similar to that described by Yasargil.[5] By referring to the angiogram, palpating the scalp, and utilizing a Doppler probe, the superficial temporal artery (STA) branch is identified and microsurgically dissected from its vascular bed. (Figure 1). A hockey stick shaped scalp flap is designed to include the area approximately 6 cm above the external auditory canal where the terminal branches of the middle cerebral artery that come to the cortical surface are most likely to be larger than 1 mm in diameter. A craniectomy approximately 2 cm in diameter is created to expose the area of the angular gyrus (Figure 1), and a 10 mm segment of an appropriate recipient cortical vessel is freed from the arachnoid. The cortical vessel is isolated, and temporary clips are applied to the proximal STA and to the recipient cortical middle cerebral artery branch. An arteriotomy is then made in the recipient vessel approximately two to three times the diameter of the donor vessel. The anastomosis is performed with approximately 16 to 18 interrupted 10-0 nylon sutures. (Figure 2.)

Results

We experienced an angiographic patency rate of 95% in our series of 175 consecutive ECIC bypass procedures (Figure 3) and had one angiographically demonstrated pseudoaneurysm which spontaneously resolved by one year to a normal appearing anastomosis.[11] The overall infarction incidence of six percent in our surgically treated patients was considerably less than expected compared to an untreated patient population with similar symptoms of cerebral ischemia. Transient minimal neurological deterioration was noted in 18 patients all of whom returned to their preoperative state or improved.

The morbidity includes one acute subdural hematoma and one subacute subdural hematoma both of which were evacuated without sequelae. Two superficial infections occurred and were successfully treated.

Two deaths occurred: one secondary to a hypertensive intracranial hemorrhage occurring intraoperatively or immediately postoperatively and the second was caused by a major hemispheric infarction.

Discussion

Accessible carotid bifurcation lesions have been approached operatively since the 1950s to increase cerebral blood flow and to eliminate a source of cerebral emboli. The first ECIC microsurgical procedure was performed in 1969, and since then thousands have been done for patients with ischemic brain disease and inaccessible vascular lesions.[4-10]

The results to date of ECIC bypass procedures are encouraging as a marked decrease in the recurrence of TIAs and the incidence of stroke has been demonstrated.[12-14] About six percent of the patients undergoing this procedure suffered strokes in the months following surgery. Furthermore, the incidence of recurrent stroke in patients with minor stroke as a warning sign dropped from 67% in the surgically untreated group to two percent in the surgically treated patients that were followed for 24 months after the initial ictus. Moreover, approximately 90% of the patients who presented with TIAs were free of these symptoms, and in an additional five percent to eight percent the attacks occurred with reduced frequency following ECIC bypass.

Our results compare favorably with those of other workers in that we encountered a six percent incidence of infarction following surgery and a reduction in the occurrence of TIAs.[4-11]

We and others have had encouraging initial results utilizing ECIC bypass procedures to treat ischemic brain disease.[12-14] However, these favorable results were analyzed in a retrospective manner. A randomized study comparing best medical therapy and surgical anastomosis is now under way.[12] Over 1,000 patients have

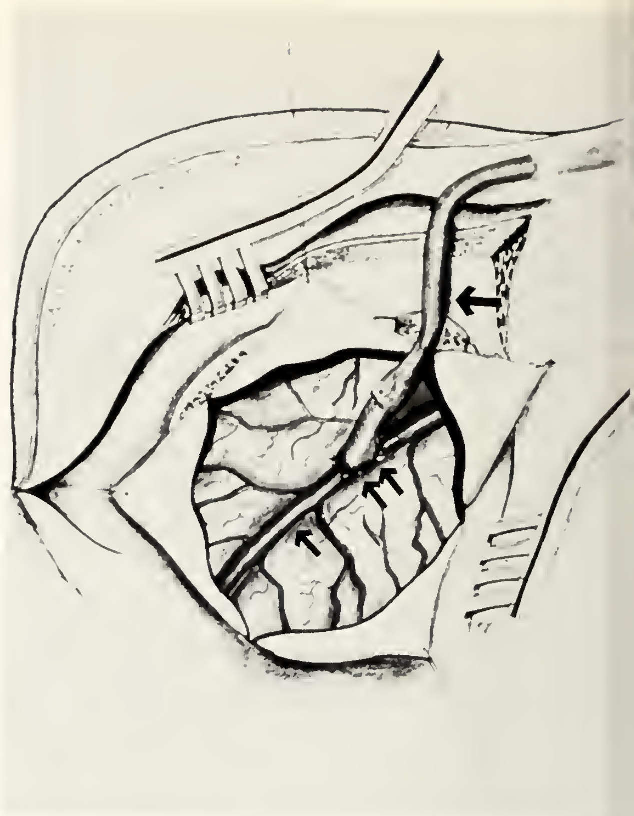

Figure 2
Completed ECIC bypass. Large arrow: superficial tempo
artery. Small arrow: cortical branch of middle cerebral arte
Double arrow: site of anastomosis.

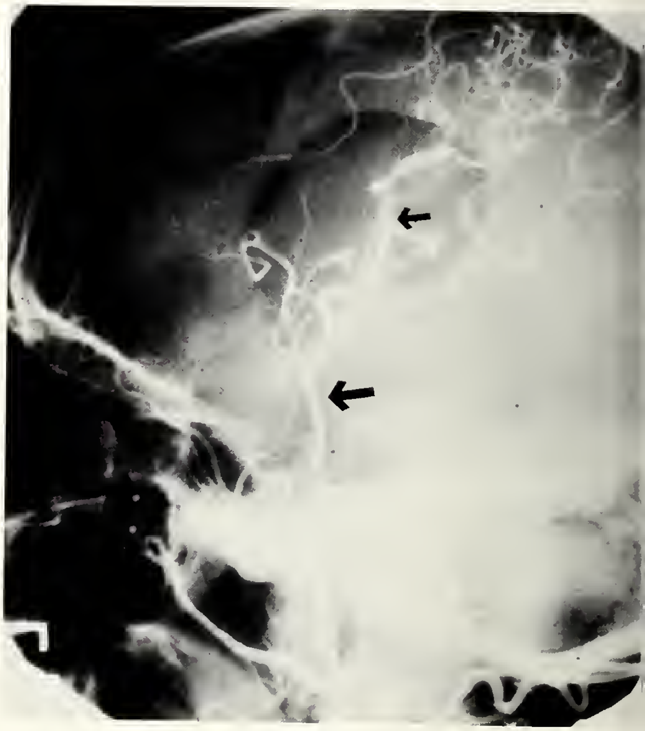

Figure 3
Angiogram following ECIC bypass in a patient with comple
occlusion of the internal carotid artery. Large arrow: th
superficial temporal artery anastomosed at the small arrow
cortical branch of the middle cerebral artery. The intracrani
middle cerebral arterial tree is filling through the anastomosi

entered in this cooperative study which has the ific objective of concluding whether ECIC bypass reduce by 50% or more the incidence of first or rrent strokes in patients with ischemic cerebro-ular disease.

appears, however, from the preliminary studies of group and others that surgical intervention by well-ed teams of microvascular surgeons can benefit y patients with transient focal ischemic events or e with mild completed strokes caused by previously cessible lesions.

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Nocturnal Movements

Colin R. Bamford, M.D.
Stuart R. Snider, M.D.
Larry Beutler, Ph.D.

There are quite a few different nocturnal movements, some of which are disturbing to the patient, some only to the bed partner. Many of these conditions are readily recognizable from their description, others less so. In this article we shall briefly list and describe the more common nocturnal movements.

Hypnogogic Myoclonic Jerks

This is a normal phenomenon that most of us have experienced as we are making a transition into light sleep.[1] The jerk is quite startling to the subject as well as the bed partner. It may also occur in response to a noise in the middle of the night. Very rarely do we see patients who have these episodes frequently enough that their sleep is actually disturbed. When this does occur, the patients tend to be anxious, neurologically normal individuals.

The truncal, respiratory and extremity musculature may all be involved in the jerk. If an EEG or polysomnograph is being recorded at this time, a vertex preponderant K complex or sharp wave may be identified. The presence of this phenomenon does not suggest the diagnosis of epilepsy, the neurologic syndromes associated with myoclonus, or the condition of nocturnal myoclonus. It requires no treatment other than reassurance.

Nocturnal Myoclonus

This condition, when it occurs, usually does not disturb the patient's, but rather the bed partner's sleep. The condition is often discovered incidentally in the polysomnography laboratory, and has often been inappropriately credited with more clinical significance than it usually is entitled to. The pattern is not a jerk, but more of a brief one to two second contraction of one or both leg muscles resulting in dorsiflexion of the ankle or flexion of the ankle, hip and knee.[2] It is similar to, but of shorter duration and milder severity than the flexor spasm experienced by paraplegic patients. The spasms recur at 30 second intervals during stage II sleep and are accompanied by K complexes on the polysomnograph.[3] The rare patient with frequent arousals deserves a trial of clonazepam 1 mg po at bedtime.[4]

From: Departments of Neurology and Psychiatry, University of Arizona, 1501 North Campbell Avenue, Tucson, Arizona 85724.

The Restless Legs Syndrome

This is a problem that taxes the endurance of both patient and doctor. It is a bona fide cause of insomnia and most probably is organic in origin, although secondary psychiatric disturbances may be present. The patient experiences a discomfort usually described as a disagreeable crawling, tingling or aching, in the legs that is specifically relieved by movement, walking, less often by rubbing.[5] The discomfort may develop at rest or when the patient is drowsy, preventing the onset of sleep; or the patient may go to sleep but after a few hours has one or more awakenings with the symptoms.

Curiously enough, the patient with this syndrome may have flexor contractions very similar to those of nocturnal myoclonus, except that they occur during wakefulness and light sleep (stage I and II).[3,6]

A positive family history may be present. Although many cases are idiopathic, it is important to keep in mind that the same or a very similar syndrome may be seen due to iron deficiency anemia,[7] Parkinson's disease,[8] myelopathy[3] and neuropathy (especially Vitamin B_{12} deficiency).[3] Each of these deserves appropriate evaluation and therapy.

Benzodiazepines are the treatment of choice.[9] Barbiturates and other hypnotics may aggravate the symptoms. Although effective, narcotics should be considered a last resort since restless legs syndrome is a life-long condition.

Myoclonus

Virtually all types of myoclonus, of which there are many, present with myoclonic jerks that are apparent with or without voluntary movement during wakefulness.[10] Thus, this is not really an issue in the differential diagnosis of movements restricted to sleep. The myoclonic jerk is a brief shock-like contraction of muscle involving the extremities and occasionally the trunk. It may vary in its distribution from being focal, to asymmetric, to diffuse. Palatal myoclonus is a repetitive contraction of the palatal, and sometimes facial and neck musculature that occurs usually after brainstem strokes. It may be equally pronounced in the waking and sleeping or comatose states.

Nocturnal Seizures

It is very well known that sleep is a potent activator of electrical seizure activity on the EEG recording. Patients, particularly those who have complex partial seizures, may develop temporal lobe spikes and sharp waves only while drowsy.[11] In general, an activator of electrical seizure activity is also an activator of clinical seizure activity, and thus it is not surprising to find that some patients only have seizures at night, or they have the majority of their seizures at night.

Complex partial seizures may be difficult to recognize when they occur at night, especially if they don't awaken the patient, because many of their manifestations may be silenced by the sleep itself. If the patient awakens, the presentation will be similar to a diurnal seizure. The patient may have an aura of fear, disturbed thinking (confusion), distorted perceptions (hallucinations, delusions) or automatic behavior (walking, fumbli Some patients may then have a generalized seizur

Grand mal convulsions may sometimes occur or night while the patient is asleep. Family members hear the patient thrashing around in bed, or the pat may awaken the next morning with a sore and bi tongue, backache, headache or soiled bedclothes.

Flexor Spasms

Flexor spasms (mass reflex) occur in paraparetic paraplegic patients.[12] They occur more frequentl only at night. There is a painful sustained flexion of ankles, knees and hips with variable symmetry. They often triggered by one of the following factor distended bladder, urinary infection, decubiti or r ious stimulation of the legs. It would be highly unu for a patient to exhibit flexor spasms without being aware of his paraparesis which is generally signific and disabling.

Cramps

This is a common problem usually occurring at ni and often triggered by unaccustomed exercise previous day.[13] They may also occur during exercise following a layoff from exercise. There is an exc ciatingly painful, powerful contraction of a mu group, usually the calves. Most cases are benign, they can be symptomatic of muscle, peripheral nerv spinal cord disease, hypothyroidism, hyponatren hypocalcemia, hyperventilation and pregnancy. Arte disease *may* cause cramp-like leg pain *but* is dis guished by the absence of powerful involuntary mu contraction.

Disorders of the Basal Ganglia

The spontaneous movements associated with b ganglia disease, viz chorea, dystonia and tremor, are suppressed during sleep and therefore these disord should not be in the differential diagnosis of sle associated excessive movement. However, on nig time awakening, patients may quickly resume th abnormal movement and complain of it as bein nocturnal disturbance and a cause of insomnia. addition, some parkinsonism patients develop hyp gogic myoclonic jerks when started on levodopa Sinemet. These also occur in Alzheimer's disease. T amino acid precursor of serotonin, L-tryptophane, 1 at bedtime, is a safe and often effective treatment.

Movement disturbances during the day or night ar fascinating field of study. Experienced neurologists drawn to the bedside by almost any spontaneous bizarre movement, most taking quite some minu before committing themselves to the nature of t movement disorder. Likewise the nocturnal moveme is fascinating but in some situations far less frequen seen and discussed. We hope that this brief introducti will be as much help to you in reading it, as it was to us preparing it.

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Bacterial Prostatitis: Diagnosis and Treatment

George W. Drach, M.D.

Diagnosis of Prostatitis: Criteria

Patients who have painful conditions of the prostate often seek the help of their physician or urologist only after symptoms have persisted for a lengthy period of time. The physician's first thoughts should be turned toward diagnosis of a true bacterial prostatitis. The criteria for diagnosis of bacterial prostatitis include a group of symptoms, signs, and findings based upon microscopy of prostatic fluid, bacteriology of prostatic fluid, histopathology of prostatic tissue, culture of prostatic tissue, and the use of certain other adjuncts to diagnosis.

The symptom complex of prostatitis often includes urinary urgency, frequency, and poorly defined perineal or penile pain which is sometimes associated with urination or ejaculation.

The physical signs of prostatitis are nonspecific. On occasion, one will palpate a tender painful mass in the area of the prostate upon digital rectal examination. More often, the prostate is not usually tender or enlarged, but it may only feel boggy or edematous. Urinary flow may be compromised significantly because of prostatic edema. Uroflowmetry becomes a necessary part of the patient's evaluation.

Prostatic massage is performed. If an adequate amount of prostatic fluid is expressed, microscopy of the prostatic fluid remains the most important examination that may be performed. Most authors agree that the presence of more than 10 to 20 white blood cells per high-power fluid is indicative of the presence of prostatitis. In addition, infected prostatic fluid often contains white blood cell clumps and mucoid debris; it is deficient in lecithin bodies and also contains large oval fat bodies and macrophages.[1]

From: Department of Surgery, Section of Urology, University of Arizona Health Sciences Center, Tucson, Arizona. Reprint requests to Dr. George W. Drach, Professor of Surgery, University of Arizona Health Sciences Center, Tucson, Arizona 85724.

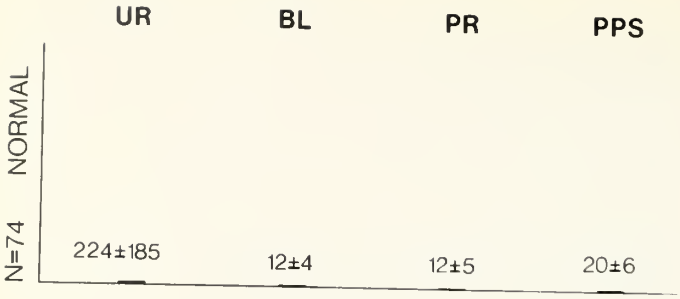

Figure 1
Quantitative bacterial counts of gram positive and gram negative organisms grown from urine specimens and prostatic fluid of normal males. Numbers represent mean bacteria per ml. ± one standard error; histogram gives a visual perspective of numbers of bacteria in various specimens. Comparison of this pattern with Figure 2, 3, and 4 aids differential diagnosis. Terminology is different from that of Meares and Stamey (1968); where their VB_1 = our urethral urine, UR, VB_2 = our bladder urine, BL, EPS = our expressed prostatic secretions, PR and VB_4 = our postprostatic massage urine, PPS.

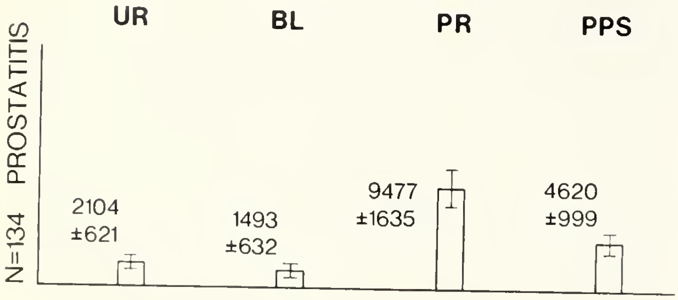

Figure 2
Data for patients with prostatitis. Note dominant growth in PR, a most significant aspect of diagnosis of prostatitis.

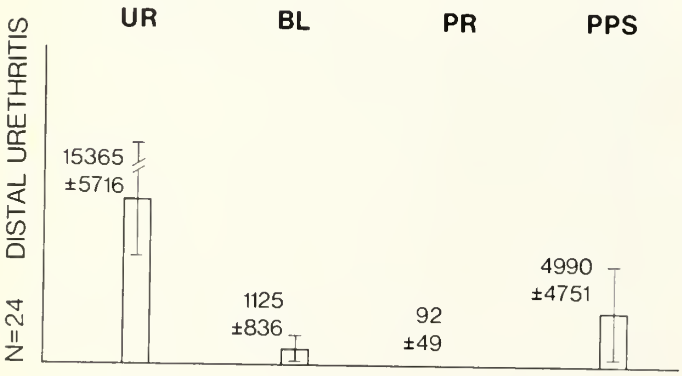

Figure 3
Data for patients with urethritis. UR contains significantly greater numbers of bacteria than all other specimens.

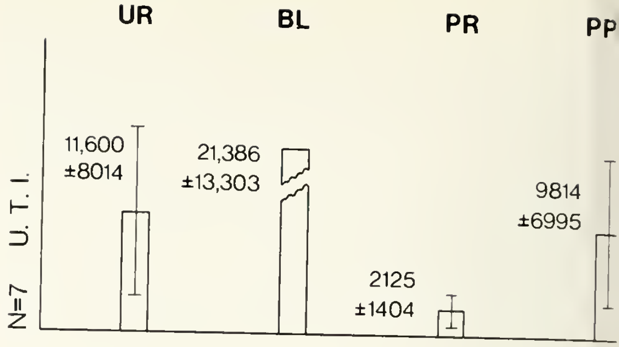

Figure 4
Data for patients with urinary tract infection (U.T.I.). Bl
most bacteria, and addition of normal prostatic fluid to
decreases urinary bacterial count.

Collection of prostatic fluid is only one portion of
complete bacteriologic examination of the patient v
is suspected of having prostatitis. The classical metho
collection of urethral, bladder, expressed prostatic fl
and postprostatic urines has been described by Mea
and Stamey.[2] Application of these techniques by Dra
indicated certain numerical patterns of bacterial gro
which are indicative of prostatitis, distal urethr
urinary tract infection or normal.

Diagnosis of true bacterial prostatitis depends
isolation of significantly greater numbers of bacte
from the expressed prostatic fluid or postprost
massage urinary specimen than are found in the ureth
or bladder specimen. In earlier studies of Drach,[3] val
of 600 to 5000 or more bacteria per ml in prostatic fl
represented prostatitis if the associated bladder a
urethral specimens had much lower numbers
bacteria. These observations are illustrated in Figure
through 4. Another useful rule-of-thumb for diagno
of bacterial prostatitis is that the prostatic fluid
postprostatic massage specimen should contain at le
ten times more bacteria than either the urethral
bladder specimen. The use of seminal specimens
diagnosis of prostatitis has been reported.[4] However, t
author still prefers to get prostatic specimens
prostatic massage. In questionable cases it is preferal
that significant numbers of the same infecting organi
be obtained on examination conducted five to sev
days later.

Random needle or punch biopsies of prostatic tiss
have not been very useful in the diagnosis of the disea
Histopathologic examination often shows norm
prostate gland in the presence of known prosta
infection. Why is this so? Kohnen and Drach[5] examin
162 consecutive prostatic surgical or autopsy specime
for presence of inflammation and/or proven prostatit
Of the patients, 26 had proven significant infection
the prostate within 60 days prior to surgery. Thirty-fi

Table 1
Classification Summary: Benign Painful Prostate Disease

	Systemic* Signs	Purulent Fluid	Proven Bacteria	Perineal Pain	Flow Decrease
Bacterial	Yes	Yes	Yes	Yes	Yes
ic Bacterial	No	Yes	Yes	Yes	Yes
acterial	No	Yes	No	Yes	Yes
todynia	No	No	No	Yes	Yes

r, chills, malaise

nts had culture negative specimens of urine and tatic fluid. It was found that 98% of all 162 patients or *without* infection had some prostatic inflamon. The mean cross-sectional area of tissue involved nflammation was five percent! There was no rence in the amount of inflammation between e patients not infected and those infected with gram tive organisms. In patients with proven gram ative prostatitis, there was an average area of mmation of the prostate of 13%, a value that differed ificantly from the mean of five percent found in fected patients. Hence, only 13% of the tissue of the tate is inflamed in a patient with chronic prostatitis. this small amount of tissue inflammation that makes lom biopsy and culture to tissue an unproductive ly. These findings confirmed the focal nature of tatitis noted by Blacklock.[6]

conjunction with the above study, numerous ures of prostatic tissue were made. If cultures were n from areas of tissues specifically involved with mmation, results usually correlated with bacterigic results. Where random biopsies or pieces of tissue e cultured, bacteria growth was not usually obed. Hence, routine culture of prostatic tissue suffers n the same sampling error as does histologic mination.

everal authors have proposed interesting adjuncts to study of prostatic fluid in prostatitis. Amongst these measurement of prostatic fluid pH, serum antibody rs against infecting prostatic organisms, deteration of prostatic fluid zinc concentration, and sence or absence of prostatic bacterial antibody ting. Fair and Cordonnier[7] have shown that prostatic d over pH 7.7 should be considered suspicious for statitis, whereas ph below 7.7 indicates probably mal fluid. Meares[8,9] has shown that patients with te or chronic prostatitis have significant elevations of um antibody against the infecting organism. crease or absence of this antibody following treatnt correlates with clinical cure. Infected prostates produce bacteria with significant amounts of local tbody and antibody coating of bacteria.

air and Cordonnier have shown that the range of static fluid zinc concentration in patients with prov- prostatitis is 0 to 139 μg/ml with a mean of 15 μgs. rmal individuals had a range of 150 to 1000 μg/ml with a mean of 448 μgs. It is noteworthy that no overlap occurred. Hence, very low prostatic zinc concentrations are correlated with infection. With successful treatment, these zinc levels return to the normal range.

Classification of Prostatitis

In past years one difficult problem associated with diagnosis of prostatitis has been confusion in classification of the disease. Therefore, Drach, et al[1] combined the observations on prostatitis of four different research laboratories and proposed a classification of prostatitis. This classification establishes the four categories bacterial prostatitis (acute or chronic), nonbacterial-prostatitis or prostatodynia. The method used to make the appropriate diagnosis includes observations on symptoms, signs, microscopy of prostate fluid, bacteriology of prostatic fluid, and presence or absence of urodynamic abnormalities of voiding. The classification is summarized in Table 1. It has proven to be useful on a clinical basis, but it is subject to future modification as we expand our knowledge of etiology of prostatitis. Nonbacterial prostatitis and prostatodynia are discussed more fully elsewhere.[12]

Once the patient has been clearly placed in the category of bacterial prostatitis, it is likely that the infecting organism will be one of the gram negative agents illustrated in Table 2 or the most common gram positive infecting organisms, also noted in Table 2. Drach[3] has indicated that on occasion other gram positive organisms may be infecting agents in prostatitis. There is no doubt, for example, the Staphylococcus

Table 2
Bacteria Often Associated with Prostatitis

	Approx. %*
E. Coli	31
Prosteus sp.	13
Klebsiella	8
Pseudomonas	4
Enterobacter	3
Providencia	2
Serratia	1
Enterococcus	21
Staphlococcus	17

*Modified from Drach[3] total of 96 patients with proven bacterial prostatitis epidermidis has created prostatic infection in some patients. However, one must adhere to strict bacteriologic criteria for the diagnosis of this problem. Gram positive organisms are dominant commensal urethral flora and may often be obtained from the normal anterior urethra or prostatic urethra.

Treatment of Bacterial Prostatitis

Once a bacteriologic diagnosis of the cause of prostatitis has been made, one normally gets drug sensitivity studies on the organism. For patients who have acute *bacterial prostatitis*, it has been found that use of any agent to which the organism is sensitive is likely to result in a satisfactory cure. Such patients may also require supportive therapy in the form of intravenous fluids, analgesics, and sedation. Not infrequently, they will develop complete urinary retention due to prostatic edema and may require catheter drainage. Persistence of fever, perineal pain, or difficulty with urination for periods greater than three to five days after initiation of therapy should make one suspect the presence of prostatic abscess, which may need surgical drainage.

Chronic bacterial prostatitis represents one of the most difficult treatment problems to face the physician. Patients with *chronic bacterial prostatitis* should be treated with a drug that will penetrate the prostate gland and to which their infecting bacteria are sensitive. Several drugs have been proven through time to be effective. Trimethroprim/sulfamethoxazole is one of these, but reports have been appearing in the literature that seem discouraging with regard to the effectiveness of thrimethroprim/sulfamethoxazole in the therapy of prostatitis. Most authors, including myself, have reported a cure rate of approximately one-third of all patients treated with this medication.[10] This rate still is better than no cure at all. Newer drugs which penetrate prostate tissue and fluid, such as minocycline, doxycycline, and carbenicillin have specific usefulness in patients in whom the infecting bacteria are sensitive to these drugs. Although penetration of the prostate gland by such drugs may not be optimal, they appear to achieve satisfactory tissue levels for cure. Erythromycin also remains a useful drug when the infecting organism is sensitive to it.

Average treatment duration with all drugs for prostatitis is six weeks, with two courses indicated if relapse occurs. If one cannot eradicate the infecting bacteria, as is unfortunately to often the case, then one must consider suppression of associated urinary infection with medications such as methenamine mandelate, methenamine hippurate, nitrofurantoin, or low doses of antibiotics such as those mentioned above.[11,12]

Some authors have proposed the use of oral zinc in the treatment of chronic prostatitis. The therapeutic rationale for such treatment lies in the fact that prostatic fluid of infected patients has lower zinc concentrations than that of normal individuals. However, Fair and Cordonnier have pointed out that administration of oral zinc does not result in an increase of zinc in prostate fluid of infected individuals. Only eradication of infection does so. In addition, the author an colleagues have published two studies which sho high zinc concentrations in the prostate are lik interfere with the activity of polymorphon leukocytes or macrophages[13,14] Hence, any imp ment in prostatic fluid zinc created by oral ac istration could potentially interfere with the activ these inflammatory cells that are attempting to prostatitis. Perhaps the decrease in prostatic fluic found in association with infection is, indeed, the b way of allowing white blood cells to improve performance. The failure of prostatic fluid zir increase after oral administration of zinc, and potential negative affect that increased prostatic might have on white blood cell activity have cause clinics to avoid its use in the treatment plan for statitis.

Surgery continues to have minimum use in specific treatment of prostatitis in most patients. major exceptions are those individuals in who specific lesion of the prostate, ejaculatory duct seminal vesicles can be defined. For this reason, pat who are especially resistant to treatment after at two or three courses of therapy should be subjectec complete lower genitourinary tract evaluation w includes cystoscopy, retrograde and antigrade uret grams, radiography of the ejaculatory ducts intern and if necessary bilateral seminal vesiculograms. A example, we have evaluated a patient who was resis to several courses of antibiotic therapy of prostatitis had an organism that developed progressive resista to all antibiotics that were available. Discovery surgical resection of an utricle cyst in this individual eliminated his prostatitis and enabled him to return productive life after two years of chronic pros invalidism.

Summary and Conclusions

Bacterial prostatitis can now be proven with a degree of reliability through the use of divided uri and prostatic cultures which indicate localizatio infecting bacteria to prostatic fluid. Although sc adjuncts to bacterial culture techniques have b proposed in diagnosis of prostatitis (such as prost fluid pH, zinc concentration, or various immunolc studies), diagnosis and proof of effective therapy require prostatic fluid examination. Once the infect organism or organisms have been identified, a plan approach to specific antibacterial therapy may designed based on the sensitivities of the organisms the availability of drugs that will penetrate through blood-prostatic barrier. Prolonged follow-up is nec sary after treatment of such patients because of frequent recurrence of prostatitis.

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Increased Circulating Dopamine Levels Associated with Exercise, Stress and Hypertension:

A Brief Review of Mechanisms and Significance

Stuart R. Snider, M.D.

Abstract

In humans, the concentrations of unconjugated dopamine (DA) in plasma are approximately equal to those of epinephrine (E). Plasma DA like norepinephrine (NE) and E increases during physical effort and stress, implying that it is released from peripheral sympathetic nerves and adrenal medulla.

In most animal species sympathoadrenal tissue concentrations of unconjugated DA are quite low. However, they may increase dramatically, two to tenfold or more, with sustained increase in sympathetic discharge. Because of increased turnover and release of NE+E, there is an even greater increase in the concentration ratio, DA:NE+E, in tissue with a roughly equivalent increase in the DA:NE+E ratio in plasma.

Almost all of the DA is rapidly conjugated upon release, and it is necessary to measure total (free + conjugated) DA to appreciate the magnitude of the plasma DA increases. Plasma concentrations of total DA may be used as an indicator of sympathadrenal DA release rate. Since formation and release of DA reflects the reserve of the sympathetic nervous system, plasma DA may also serve as an indicator of the degree of training in animals and humans.

In many hypertensive patients, the plasma total DA concentration is elevated because of increased sympathetic activity, increased aldosterone or decreased renal clearance. In most of these patients, the DA levels decrease with successful treatment. Thus, measurement of total plasma DA along with NE+E may provide a useful biochemical index for categorizing hypertension and following its treatment.

Key Words: Dopamine, catecholamines, plasma, adrenal glands, peripheral sympathetic nerves, stress, exercise, hypertension.

From: Departments of Neurology and Pharmacology, University of Arizona Health Sciences Center, University of Arizona Health Sciences Center. Reprint requests to Stuart R. Snider, M.D. 1501 North Campbell Avenue, Tucson, Arizona 85724.

Table
Plasma Dopamine (DA) and Norepinephrine + Epinephrine (NE + E) in Hypertension

Subjects (n)	Total DA Concentration*	Mean % conjugated DA	Total NE+E Concentration*	Mean % conjugated NE+E	Total DA / Total NE+
Control (24)	7.18 ± 0.72	95%	8.75 ± 1.25	78%	0.82
Essential hypertension, Sustained (52)	13.1 ± 1.3	97%	5.46 ± 0.62	56%	2.4
Essential hypertension, paroxysmal BP peaks					
Baseline at rest (16)	28.1 ± 3.3	96%	6.34 ± 1.71	58%	4.4
Baseline following beta-blocking treatment (5)**	15.5 ± 3.2	97%	7.6 ± 3.1	66%	2.0
At height of the BP peaks (16)	161 ± 34	83%	8.53 ± 1.8	63%	19
Primary aldosteronism					
Preoperatively (6)	109 ± 19	97%	13.6 ± 2.1	89%	8.0
Postoperatively (3)	39 ± 3.3	99%	6.8 ± 3.2	32%	5.8

*Concentrations in pmol/ml, mean ± SEM, of total (unconjugated + sulfoconjugated) catecholamine.
**Preliminary unpublished data courtesy of Dr. O. Kuchel.

Introduction

In the last decade, dopamine (DA) has been recognized as an important neurotransmitter of the peripheral nervous system. A variety of DA receptors have been characterized: presynaptic receptors on noradrenergic nerve terminals and postsynaptic DA receptors in kidney, carotid bodies, peripheral blood vessels, including the coronary and cerebral vasculature, and parts of the gastrointestinal, genitourinary and endocrine systems.[1-4] The physiologic functions of these receptors include vasodilatation, increased sodium excretion, and increased myocardial contractility.[1-4]

The importance of DA as a peripheral neurohormone has been less clearly defined. In humans at rest, DA accounts for approximately one-fifth of the free catecholamines and one-half of the total catecholamines in plasma.[3,5,6] (Table.) Like norepinephrine (NE) and epinephrine (E), its concentration varies in approximate proportion to sympathetic nervous system activity.[3] However, unlike NE and E, a very large proportion, about 98%, of the total plasma DA is conjugated to sulfate or glucuronide.[6]

While conjugated DA in the circulation is usually considered an inactive metabolite of DA, almost devoid of physiologic activity, it may in fact play an important part in the peripheral effects of catecholamines: 1) the high affinity sulfoconjugation of DA may competitively inhibit the lower affinity NE and E conjugation and thus alter circulating levels of free NE and E,[7] and 2) dopamine sulfate may serve as a transport form of DA in blood and tissue. In vivo conversion of DA sulfate to free DA has been demontrated by Buu and coworkers under certain conditions,[8] and DA sulfate may also be converted to free NE by dopamine beta-hydroxylase[9] or even to free E in peripheral tissues such as the kidney.[7] Of greater practical importance, however, is the possibility that total circulating DA in humans may correlate with, serve as an indicator for, sympathetic nervous syst activity in: 1) the normal stress response,[10] and 2) stre related diseases, such as hypertension.[11]

Plasma Dopamine as an Indicator of Response Adaptation to Stress

Dopamine, NE and E are released into the blo stream in approximate proportion to their c centrations in the adrenal medulla and periphe noradrenergic nerves.[12-14] Under conditions of creased sympathetic nervous system activity as dur exercise or some kinds of stress, tissue levels of free increase while levels of NE + E are unchanged decreased.[12-14] Thus during exercise or stress t proportional release of DA and its concentration plasma may be markedly increased (Figure).

Free DA is rapidly conjugated to sulfate after rele from the adrenal and peripheral nerves into t circulation.[7] Since DA sulfate may be taken up from t bloodstream into remote tissue sites and be convert into free NE,[8,9] it could serve as a reservoir of DA t increases the capacity of the sympathetic nervous syste to synthesize and release NE and E during stress.

Increased release of DA appears to be one compone of the normal response to certain kinds of stress in we trained or conditioned subjects. During intense physi effort, increased amounts of free DA released fr sympathetic nerve terminals may serve to increa myocardial contractility, maintain blood flow to vi organs, and maintain adequate urinary output.[1-4]

The adequacy of the sympathetic nervous system respond to repeated stress may be reflected in t magnitude of the DA release. For more than a decad urinary excretion of DA has been used in Eastern Euro and Russia as an index of level of training and reserve the sympathoadrenal system in athletes and pation to stressful environments.[15] As an indicator of ining, urinary DA is less reliable than plasma DA since s influenced by hormonal and other factors unrelated the sympathetic response. However, recently, higher seline DA sulfate concentrations have been reported plasma of well trained than less well trained long-tance runners.[16]

ncreased sympathoadrenal DA release is more likely accompany subacute or repeated stress associated h a sense of effort and/or actual physical work than ute stress associated with distress but little physical rk. This may be related to the primary association of ort with the sympathetic-adrenomedullary response d of distress with pituitary-adrenocortical activation. e distress-elicited increase in circulating glucocor- oids could alter the activity of catecholamine syn- esizing and degrading enzymes in such a way that ady-state conversion of DA to NE is increased and the sue and plasma ratio of DA to the beta-hydroxylated echolamines is decreased.[17]

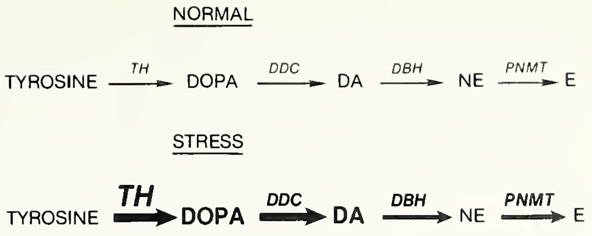
Additional research, with controlled measurements of rtisol and total dopa, DA, NE, E and their metabolites plasma, RBC's and urine, is necessary. Based on the imal and limited human studies referred to above, we ould predict that increased dopa and DA levels may ove a valid measure of training in athletes and of aptation in other repeated stress situations.

le of Circulating Dopamine in Hypertension

Plasma Dopamine in Patients with Hypertension

Measurements of free and conjugated catechol- ines in various kinds of hypertension by Kuchel and -workers[7,11,18] have revealed substantial increases in e total DA content of plasma in comparison to control ojects. In sustained essential hypertension total DA in sma was about two-fold normal while in the ogroup of patients with hyperadrenergic hyper- nsion associated with paroxysmal BP peaks total sma DA was 4- to 22-fold normal (baseline and height BP peak, respectively). (Table.) In primary aldo- ronism total DA was also markedly increased, about -fold. Total betahydroxylated catecholamines (NE+E) re normal or slightly decreased in the majority of ese patients, the exception being primary dosteronism preoperatively. (Table.)

As in nonhypertensives, there was almost complete njugation of the plasma DA—between 95% and 99%— venous blood. (Table.) In patients with hyper- renergic hypertension there was a temporary increase free DA during clinical crises, with a decrease in enous conjugated DA to a mean of 83%. (Table.) While ere was little change in the total NE + E concentration, nsiderable variation—between 32% and 89%—could e seen in the degree of NE + E conjugation. (Table.) nus, increases in BP and in sympathetic tone associated ith hypertension are better indicated by increased tal plasma DA and a decreased ratio of plasma free to njugated NE + E than by plasma levels of free techolamines (the only determination made in most inical studies of catecholamines and hypertension).



Figure

Tyrosine is normally converted in the rate-limiting step by tyrosine hydroxylase (TH) to dopa, which in turn is converted by dopa decarboxylase (DDC) to dopamine (DA). Norepinephrine (NE) is synthesized from DA via dopamine-beta-hydroxylase (DBH) and in the adrenal medulla epinephrine (E) is synthesized from NE via phenylethanolamine-N-methyl transferase (PNMT).

The short-term (hours) effect of exercise or stress with their associated sympathetic activation on catecholamine synthesis in sympatheric nerves and adrenal medulla is a large temporary increase in the rate of the TH and DDC reactions and a variable but usually somewhat smaller increase in the DBH and PNMT reactions (represented by thick and intermediate arrows, respectively). This results in increased concentrations of dopa and DA relative to NE and E. The long-term (days) effect of stress is an induction of the enzymes usually with a greater increase in TH than of DBH (represented by thick and intermediate letters, respectively). This effect, which is reversible if the stress is not repeated, also increase tissue DA concentrations relative to NE.

The release into the bloodstream of all of the catecholamine neurohormones, DA, NE, and E, is increased by strong sympathetic activation but as a consequence of increased sympathoadrenal tissue concentrations, DA release is increased to a much greater extent than NE or E. Thus peripheral sympathetic nerve terminals and the adrenal medulla may become partially "dopaminergic" when the sympathoadrenal system is activated by stress, exercise or the central abnormalities associated with essential hypertension.

B. Clinical Significance of Plasma Dopamine Measurements in Hypertension

In some hypertensive patients, increased circulating DA may be a physiologic compensatory response which acts to reduce the BP while in others it may be in part responsible for the hypertension. In either case, level of circulating DA can serve as an indicator of successful antihypertensive treatment.

Primary aldosteronism is probably an example of a compensatory dopaminergic response. With successful treatment of the hyperaldosteronism, there is a decrease in BP, plasma DA and urinary DA excretion. (Table.)

Hyperadrenergic hypertension with DA surges is an example of dopaminergic discharge possibly causing hypertension. The associated temporary rises in BP are most likely the result of the hypertensive and heart contractility-increasing actions of the very high concentrations of free DA.

It is possible (but not proven) that DA surges are involved in the pressor response that is evoked by ischemia of some vital organs and is not associated with elevations in unconjugated NE and E. Examples are BP elevations in patients following coronary bypass surgery or with coronary chest pain.

It should be recalled that DA action on BP is biphasic and dependent on concentration as well as site of release. Lower levels may reduce BP by acting on dopaminergic receptors while high circulating levels of DA have a predominantly vasoconstrictor effect by their action on alpha-adrenergic and beta$_1$-adrenergic receptors.[1]

A wide variety of drugs affect peripheral DA mechanisms, directly or via the central nervous system. Clarification of the relationship of endogenous DA metabolism to BP regulation could lead to rational use of such drugs as antihypertensive agents. Several direct-acting DA receptor agonist and antagonists are being investigated as antihypertensives.[19] It is also possible to increase the proportion of endogenous free DA in the circulation, e.g., by exercise, and thereby lower BP.

Regardless of its mechanism of action, the clinical effect of an antihypertensive drug can be anticipated or followed by measuring the concentration of plasma DA and the DA:NE+E ratio. One example is the paradoxical BP increase that may occur in hypertensive patients with high plasma DA or DA surges after administration of phenoxybenzamine, a drug that stimulates sympathoadrenal DA release.[18] A second example is the eduction in BP and plasma DA concentration by propranolol in patients with hyperadrenergic hypertension. (Table.) This follows from the results of Ablad and co-workers[20] who found that chronic propranolol administration reduced the BP and adrenal DA levels of spontaneously hypertensive rats.

Acknowledgement

The author wishes to thank Dr. Otto Kuchel and co-workers at the Clinical Research Institute of Montreal for their contributions to the manuscript, particularly the data used in the Table.

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Wind-Up Time: A Few Thoughts and Then Some

Dean Kettel, in *Arizona Medicine*, November 1982, speaks the truth when he says "health policy makers are concerned almost exclusively with cost. The competitive approach to cost control will influence medical education." But, the horror story with which he concludes, namely, that for economic reasons patient care is the number one priority of schools of medicine rather than the previous goals of education and research, depressingly makes the point that quality and the desire for excellence could suddenly be replaced by an inferiorly trained generation of physicians.

The March 4, 1983, *American Medical News* headline stated "Economic Realities Altering Profession, Medical Leaders Told." American Medical Association board chairman, Joe Boyle, said the AMA "is ready to embark upon the most ambitious project ever undertaken in either the public or private sector—developing a health Policy Agenda for the American People.

"This AMA program is expected to require three years and the agreement of 150 organizations running the gamut of American society to identify the basic principles upon which the American Medical System 'has grown to its current position of unparalleled pre-eminence in the world.' Dr. Boyle said the health policy agenda would help chart the course of medicine for the rest of this century and beyond."

Because of *potential* liability the AMA supports *predictable* mediocrity and loss of recognized excellence and quality of care, allowing "medical staffs" to deteriorate into "organized staffs."

Arizona doctors encouraged by positive statements from legislative leaders and a few well-informed, economic-minded providers get actively involved in steering, participating in, and sometimes supporting a poorly planned, expensive, inadequately managed and rarely supervised health care plan, which after six months is still such a morass of confused and muddled information, we cannot even knowledgeably oppose, in spite of gut feelings of frustration, nausea and anger.

Now the entire Maricopa County Hospital system is in jeopardy solely because of less available money, excluding the educational values and training program. Can adequate patient care evolve when financial structure is the primary consideration? Whose mother is "too old" for extraordinary measures, and who says so?

Nineteen eighty-three legislative decisions of such significance heretofore unknown—serious consideration of allowing nonphysicians to treat without benefit of diagnosis—*worse* actually *protecting* these nonphysicians by admitting in the legal phraseology that they are specifically untrained and unqualified to diagnose.

On the Other Side—Hope

The American College of Surgeons and the American College of Physicians carry the banner for quality and actively work to reject the principle of allowing nonphysicians and untrained, unsupervised personnel to care for patients in JCAH approved hospitals.

The majority of physicians and hospitals in Arizona continue to give care for the indigent and medically needy regardless of little or no renumeration, and this in the face of constant, nonsensical, administrative, bureaucratic nitpicking, adverse publicity, and no structured plan to oppose the horrendous attempts at implementation of AHCCCS.

Surprise! By the action of the House Health Committee Chairman "voting his conscience" and breaking a five to five tie, the state legislature defeats the powerful attempt to allow *treatment* of illness without diagnosis, thereby allowing the existing Medical Practice Act (which ArMA supports) to stand intact.

A tremendous personal lift, restoration of some deep-inside-me confidence in our university and physicians of tomorrow, this gleam of light provided by one Jane M. Orient, M.D., University of Arizona College of Medicine, Tucson, as identified in *JAMA*, January 14, 1983—read what she says about people called "dirtball"—what an insight into what AHCCCS could become! And, she didn't even refer to our state health plan as such. Go back and dig that short letter out and feel better that others do continue to love and respect humanity.

Earlier this year the noted author, Sydney J. Harris, wrote an article for the *Chicago Sun Times* entitled "Four Final Thoughts," the purpose of this article being to choose what he would say if he were writing his last column, and I would like to think most of us agree. The four themes, trite but often forgotten: 1) You gain by giving, own nothing save what you have shared or given away; 2) being and becoming are the proper ends of living, not having; 3) we are all parts of the great life chain, and we must forge stronger links, not break them; and 4) none of us live up to the best part of us—we have the whole world to improve or destroy, as we will.

These thoughts reflect optimism and hope. I consider these outstanding guideposts for the leaders of ArMA and very appropriate at this time, the changing of the guard.

John E. Oakley, M.D., F.A.C.S.
President
Arizona Medical Association

program can "benefit both physician and patient by improving the effectiveness of drug therapy, strengthening the physician-patient relationship, reducing the risk of improper use, decreasing the incidence of preventable and serious adverse drug reactions, and enhancing patient compliance," there are those who feel that sometimes too much information can be detrimental by increasing unnecessary worry. Physicians should at least review the initial batch of medication instructions to see whether they feel comfortable giving them to their patients. In order to see and get representative samples, physicians can write to the American Medical Association, Order Department, Patient Medication Instruction Program, 535 North Dearborn Street, Chicago, Illinois 60610. Local medical societies may also have samples in their offices for perusal.

During this period of intense consumer involvement in medical health care matters physicians, in appropriate situations, should have this material available.

Marshall B. Block, M.D.
Editor

Consumer Advocacy: Should We Be Helping?

Consumers are demanding, and the health care industry is promoting, greater health care awareness. This includes patient knowledgeability concerning the financial aspects of medical care, i.e., how much things cost and where they can get it cheaper, but also increased sophistication in knowledge about medical procedures, why they are ordered and/or why they are needed. In this vein, the American Medical Association has recently produced patient medication instruction leaflets which can be given to patients along with their prescription. Each sheet contains general patient information in an easily understood format. Possible side effects are also mentioned, and individualized instructions can be given in space provided. Presently there are 40 leaflets available encompassing the most commonly prescribed drugs.

The program recognizes that besides the possible benefits from such education, there are risks. Although this

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Arthur R. Nelson, M.D.
Charles Nugent, M.D.
Eric Prosnitz, M.D.
Sydney Salmon, M.D.
Lawrence Stern, M.D.

Managing Editor
Bruce E. Robinson

Editorial Assistant
Joan M. Alexander

Karen S. Addis, M.D. and **Ross S. McConnell, M.D.**, Tucson, and **Mark A. Strumpf, M.D.**, Green Valley, were notified recently that they had passed their certifying examinations. Dr. Addis is now a Diplomate in Obstetrics and Gynecology, Dr. McConnell has been certified with the American Board of Preventive Medicine in the subspecialty of Occupational Medicine, and Dr. Strumpf is now a Diplomate in Internal Medicine.

Thomas F. Griffin, Jr., M.D., Safford, has written a book, "Feeling Good for Life — The Physician's Blueprint," with the help of Bob Hirsch, noted Arizona outdoor writer. Dr. Griffin's book promises readers they can "Build a Better You in Just 12 Weeks" through exercise, diet, relaxation, and self-directed psychology techniques. According to Dr. Griffin, "a personal health plan is the book's general theme."

Donald E. McHard, M.D., Phoenix, has been appointed to the Commission on Education of the American Academy of Family Physicians.

John F. Kahle, M.D., Flagstaff, was installed as president-elect of the Arizona Chapter of the American Academy of Family Physicians during the Academy's recent annual meeting in Scottsdale. As president-elect, Dr. Kahle will serve as chairman of the scientific assembly committee. He will be installed as president in February 1984.

Alan H. Mallace, M.D., Sun City, discussed the physiological aspects of age at the March forum on "Realities of Aging" presented at Boswell Memorial Hospital under the sponsorship of the Arizona Occupational Therapy Association.

Dermont W. Melick, M.D., Phoenix, was honored recently with the first "Distinguished Actions in Health Care Award" presented by the State Health Planning Advisory Council and the State Health Coordinating Council. Dr. Melick, described as the 'father' of rural health in Arizona, was recognized for his many contributions to rural health. These include extending continuing education and establishing a dial-a-tape library service for rural health practitioners as well as assisting rural committees to establish health facilities, medical services, and community health organizations. Through his efforts to develop health policy and programs for rural areas, Dr. Melick has contributed significantly to improved health and medical care in Arizona.

Arnold L. Serbin, M.D., Phoenix, discussed chest disease at the March Health Talk forum cosponsored by the Arizona Medical Association and Blue Cross/Blue Shield

Robert Montgomery, M.D., Douglas, retired early in March after 36 years of medical practice. Dr. Montgomery's many community activities include a five-year term as a member of the Douglas School Board and service as school and team physician for the Douglas and Elfrida School districts. Dr. Montgomery looks forward to travel and fishing.

Alan Yudell, M.D., Barry Hendin, M.D., and **Alvin Sidell, M.D.**, Phoenix, served as examiners at the oral examinations for specialty certification in Neurology given by the American Board of Neurology in Los Angeles in March. Drs. Yudell and Hendin served as examiners in Adult Neurology. Dr. Sidell was an examiner in Child Neurology.

The schedule for **Health Highlights**, a public education program presented on cable television by the Arizona Medical Association and SamCor is as follows:
May: Travel Tips—Allen B. Moore, M.D
June: Desert Survival—George F. Brown, M.D.

The program is presented on American Cable at 12:30 p.m. on Saturday, on Western Cablevision Monday at 4:30 p.m., and on Storer Cable Friday at 3:00 p.m. in

Mesa/Ahwatukee and Monday and Wednesday at 5:00 p.m. in Phoenix/Glendale.

The Arizona Medical Association welcomes the following new members:

Apache

R. K. Dowling, M.D.
Orthopedic Surgery
Wagon Wheel Plaza, Lakeside
University of Colorado
School of Medicine—1977

William J. Waldo, M.D.
General Surgery
Wagon Wheel Plaza, Lakeside
University of Virginia
School of Medicine—1972

Cochise

Steven I. Walsh, M.D.
Diagnostic Radiology
2803 Zuni Court, Sierra Vista
University of Kansas
College of Health Sciences—1972

Coconino

John L. Jensen, M.D.
Family Practice
P. O. Box N , Sedona
University of Nebraska
College of Medicine—1979

Maricopa

Gregory Lee Ellison, M.D.
Family Practice
550 North Country Club Road, Mesa
University of Nebraska
College of Medicine—1979

Edward H. Lipson, M.D.
Pediatrics
St. Joseph's Hospital, Phoenix
State University of
New York, Upstate—1973

Narendra Myneni, M.D.
General Surgery
2034 East Southern Avenue, Tempe
J. I. P. M. E. R., Pondicherry,
India—1970

Stephen A. Pierce, M.D.
Internal Medicine/Cardiology
4800 North 22nd Street, Phoenix
The Chicago Medical School—1974

James W. Shafer, M.D.
Ophthalmology
6050 East Calle del Sud,
Scottsdale
The Johns Hopkins University
School of Medicine—1966

Leo Kent Smith, M.D.
Cardiology
4800 North 22nd Street, Phoenix
Creighton University—1968

Richard Zeschke, M.D.
Family Practice
3417 North 32nd Street, Phoenix
State University of
New York—1976

Pima

Abraham R. Byrd, III, M.D.
Family Practice
6502 North Camino Padre
Isidoro, Tucson
University of Arizona
College of Medicine—1973

Thomas P. Foerster, M.D., left, chairman of ArMA's Ninth Annual Sports Medicine Symposium, checks last minute details with Robert L. Hagan, M.D., luncheon chairman. More than 400 registrants attended the three-day meeting

Drs. James Sarn, Dermont W. Melick and Louis J. Kettel at the Distinguished Actions in Health Award presentatior

The faculty, Current Perspectives V, Dilemmas of a Teenager: Drs. George D. Comerci, moderator, Donald Speer, Ronald Hansen, and Max Costin, The University of Arizona College of Medicine

Lloyd A. Coaker, M.D.
Internal Medicine/Pulmonary
6451 East Calle Caster, Tucson
University of Michigan
Medical School—1976

Carl S. Freeman, M.D.
Radiology
2401East Glenn, No. 32, Tucson
Albany Medical College—1976

Steven A. Friedman, M.D.
Internal Medicine/Gastroenterology
Tucson Clinic, Tucson
University of Pennsylvania
School of Medicine—1977

Cliff C. Mann, M.D.
Internal Medicine
1061 West Safari, Tucson
University of Texas,
Southwestern Medical School—1971

Jane Simonson, M.D.
Family Practice
701 West Wheatridge, Tucson
University of Arizona
College of Medicine—1977

Pinal

Edilberto S. DeLeon, M.D.
Anesthesiology
P. O. Box P, Casa Grande
Far Eastern University,
Manila, Philippines—1962

Yavapai

Ralph R. Ashby, M.D.

The faculty, Current Perspectives VI, Newer Aspects of VD: Drs. Karen Starko, E. Russell Alexander, John V. Kelly, moderator, Steven Linnerson, and Peter Kelly

Anesthesiology
1003 Willow Creek Road, Prescott
University of Arizona
College of Medicine—1976

Dennis N. McDonald, M.D.
Urology
1003 Division, Prescott
Loma Linda University—1977

David Wike, M.D.
Pathology, Clinical Pathology,
Nuclear Medicine
1003 Willow Creek Road, Prescott
University of Maryland
School of Medicine—1969

Yuma

Danilo Zapanta, M.D.
Radiology
YRMC Radiology Department, Yuma
Far Eastern University,
Manila, Philippines—1973

Service Member

Ismar Cintora, M.D.
General Surgery
Veterans Administration
Medical Center
University of San Carlos,
Guatemala—1966

Associate Member

Walter J. Henry, M.D.
Obstetrics/Gynecology
7344 East Rose Lane, Scottsdale
Temple University—1941

Resident Members

William D. Anderson, M.D.
Pathology
University of Arizona
Health Sciences Center, Tucson
University of Iowa—1979

Frank N. Bever, M.D.
Pathology
University of Arizona
Health Sciences Center, Tucson
University of Iowa—1979

Jose Luz Reynoso, M.D.
Family Practice
Scottsdale Memorial Hospital,
Scottsdale
Creighton University—1980

Student Members

Matthew Atlas
Zoe K. Draelos
Blair Hess
Jayne Melby
David B. Meyer

Correspondence

Editor:

The Arizona Health Care Cost Containment System, or "ACCESS," has been in operation for six months. Although the program is still evolving, this milestone is an appropriate time to take a backwards look and see how far the program has come and what it has accomplished.

ACCESS began on October 1, 1982 with 18 full service contractors providing care in all 14 Arizona counties. These prepaid contractors have in turn obtained hundreds of subcontracting physicians, hospitals, pharmacies, and other providers to help them meet their contractual obligations. The contractors are paid in advance each month by the state for the patients enrolled with them in the previous month. It is then their responsibility to pay their subcontractors. To date, the 18 prepaid health plans have received $34,728.603 in capitation payments.

In the first few months of ACCESS attention was focused on enrolling the indigent population. More than 140,000 low income members had entered the program by March 1, out of a total potential population of approximately 215,000. ACCESS enrollment is growing at the rate of 3,000 per week, and the program is already serving more patients than were formerly served by all the counties combined.

The program's contracts with prepaid health plans were for one year, through September 30, 1983. In May ACCESS will reopen the bidding and solicit competitive proposals from providers statewide to serve both the indigent population and public and private employee groups. Bidders will be required to bid on the entire range of ACCESS members, and will not be allowed to bid only for a limited portion of that population, i.e., the employee groups but not the indigent.

The ACCESS Division of the Department of Health Services and the program's private administrator, MCAUTO Systems Group, Inc. (MSGI), are making every effort to straighten out the systems and payment problems which have surfaced in these opening months. Emergency rules and regulations have been issued to sanction contractors who have been delaying payment to their subcontractors. MSGI has accelerated the payment of capped fee-for-service claims to noncontracting providers from a monthly cycle to a weekly one. Governor Babbitt has assigned a computer and data systems specialist to assist MSGI in solving the technical problems which have hampered the enrollment and payment processes.

There also have been some difficulties with low payments to physicians acting as primary care providers within the prepaid health plans. ACCESS officials are sensitive to this issue, and they have been urging physicians to be more careful in the business arrangements they make with the prepaid plans. Physicians experiencing payment problems might consider forming their own groups to bid for ACCESS prepaid contracts; they would then be provider contractors rather than affiliates or subcontractors, and would receive payment directly from the state.

ACCESS brings a new way of doing business to Arizona's health care industry, and the innovativeness and experimental quality of the program have contributed to the "growing pains" it has experienced since its birth. Competition, prepayment and case management represent a radical departure from the conventional fee-for-service mode of financing health care. However, providers should not feel threatened by these changes. ACCESS is not designed to eliminate profitability. Its objective is to finance health care services in such a way that quality care is provided at a cost that is affordable to the public and fair to providers. There is money to be made in ACCESS by efficient, well managed providers. Competition is intended to encourage this by weeding out those organizations which aré inefficient or poorly managed.

Bernie Madura
Public Information Officer ACCESS

ArMA Reports

The minutes appearing in this section have been condensed. A complete copy of them will be sent to any member requesting one.

AD HOC COMMITTEE ON HOSPITAL SERVICES

The Ad Hoc Committee on Hospital Services met March 1, 1983.

Future of Hospital Development

The committee opened the meeting by listening to the lead story, "The Hospital Prognosis," contained on the February 24th tape of Audio Medical News produced by the AMA, which was immediately followed by an oral presentation by Dr. Merlin K. DuVal of his personal views of the national picture of hospital growth and expansion, the coalition movement, and legislative activity. Dr. DuVal also commented on his perception of Arizona developments in these same areas and closed with the statement that he felt the future lies in the new relationship which must be formed between medical staffs and hospital boards. Following a question and answer session, Ron Krause addressed the members on much the same topics but with a greater emphasis on state activities and offered whatever assistance he or the Arizona Hospital Association staff might be to the committee, as well as indicating a definite interest in joint participation.

Audiovisual Presentation

Dr. Ward presented for the committee's viewing the refined version of the audiovisual presentation which had been approved by the Executive Committee on February 25, 1983 and endorsed for use by the Ad Hoc Committee on Hospital Services to hospital medical staffs, county societies, and other interested groups throughout the state.

Following a few editorial comments and suggestions by the committee, it was agreed that immediate contact be made by ArMA staff with the Chiefs of Staff in Maricopa County requesting time be allowed during one of their upcoming meetings for a showing of the presentation. Following the establishment of dates and time, all members present agreed to make themselves as available as possible to personally take the presentation to su meetings and respond to questions a comments of the group.

The committee was informed that D Robles, ArMA's President-Elect, had already volunteered to be responsibl for scheduling and showing the presentation at all meetings in the Tucson area.

It was agreed that additional sets of slides would be prepared and inquiry made as to possible rental of addition audiovisual equipment to enable as many showings as possible within a short period of time.

Letter of George M. Nickas, M.D.

January 31st correspondence of George M. Nickas, M.D. relating his concerns re: hospital growth, medical staffs, etc., together with the February 2nd letter from Clyde W. Kurtz, M.D., Received.

Legislative Activity

Clyde W. Kurtz, M.D. briefly describ the provisions of H.C.R. 2016, H.B. 243 and H.B. 2437 recently introduced in the Legislature relating to hospital cos and health care institutions, as well as indicating the position taken on each piece of legislation by ArMA's Legislative Committee.

Resolutions

The committee received comments and a proposed resolution from Dr. Leonard but, due to the fact that Dr. Leonard had to leave the meeting earl and was unable to discuss the same, agreed that these items would be put on the agenda for discussion at the next meeting of the committee.

Dr. Ward presented a draft resolution for the committee's review which would enable the establishment withi ArMA's bylaws of a Hospital Medical Staff Section and, following a review and minor amendment by the committee, it was moved and carried that the Ad Hoc Committee on Hospit Services submit a resolution, as set fort in exhibit "A" (a copy of exhibit "A" i available at the ArMA officie on request) to the House of Delegates during its 1983 Annual Meeting which will, if adopted, allow for the establishment of a hospital medical sta section within ArMA's organizational structure.

Future Meeting

It was agreed that a future meeting of this committee would be called at the discretion of the chairman following sufficient time lapse for showing of the audiovisual presentation and response and reaction thereto.

PUBLIC RELATIONS COMMITEE

he committee met on March 5, 1983. he committee received the following r information:

. The Utah State Medical sociation wished to order from the MA Printing Department 3,000 copies both "The Patient-Physician elationship" and the "How to Cut our Health Care Costs" brochures.

. Blue Cross/Blue Shield of Arizona d reprinted 70,000 copies of the How to Cut Your Health Care Costs" ochure and that appropriate royalties ould be forthcoming.

. Dr. Nieri and the Director of ommunications had met with SamCor deo Services' staff regarding the Health Highlights" program and that e first two presentations would deal ith (a) allergies and (b) sports edicine.

. Radio Station KOPA had pproached the Association about resenting a 60-second health bulletin, ut had changed their program format efore this could be put into place. The irector of Communications will try to ace these features on other radio ations.

5. That promotional brochures for rMA's Ninth Annual Sports Medicine ymposium were now available for istribution.

The committee reviewed and iscussed the "Media Awards" program nd decided that, despite time mitations, a pilot program should be ut into effect immediately. The rogram is to include four categories; rint: daily papers; print: weekly/semi-veekly papers; radio; and television. wards in the amount of $250.00 and laques are to be presented to the first rize winners with Certificates of Merit o be given to the runners-up, the umber of which are to be determined y the quality of entries. The ompetition is to be judged by nembers of the Public Relations Committee as soon as possible after the pril 30 deadline. It was recommended hat, in the future, judging should be lone by a panel of lay persons skilled n communications judging and one or wo physicians members of the Public Relations Committee. The lay judges re to receive an honorarium of $50 to 100. It was also recommended that next year's committee consider nlarging the program to include high chool publications.

The committee reviewed a series of ds prepared by the Monterey County Medical Society and determined that hey were not suitable for Arizona. It vas suggested that, if ads were to be prepared for Arizona use, they should tress the qualifications of an M.D. as vell as the attitude of "caring."

Because of the high cost of advertising, the committee voted to table discussion of media advertising and explore the possibility of getting the physician's message to patients via a newsletter which would be available in doctors' offices. Mrs. Clymer is to "dummy up" such a newsletter, the cost of which shall not exceed $200.

Because of the lateness of the hour, Dr. Clymer suggested that, rather than discuss long-range goals at the meeting, each member would submit them in writing. These written goals are to be submitted to ArMA and included in the minutes. (Copies of these goals can be obtained from the ArMA office.)

AD HOC INDIGENT HEALTH CARE COMMITTEE

The Ad Hoc Indigent Health Care Committee met on March 12, 1983.

AHCCCS—Quality Control

The committee received the chairman's memorandum dated February 22, 1983, regarding an update on AHCCCS Quality Control Review and then Dr. Scott requested, prior to any discussions by the committee, that Dr. Sarn inform the members of the current activity and status of the program.

Dr. Sarn discussed AHCCCS at great length, stating that: (1) on the business side, computer systems were up and running but there was a great deal of programming yet to be done; (2) on the legislative side, bills were being presented which could change and improve portions of the program; (3) on the budgetary side, there were funding problems due to the number of enrollees as well as initial amounts which had been paid and Dr. Sarn was hopeful that the budgetary needs would be met; and (4) on the administrative side, they were now in the process of putting into effect a quality assurance program. Dr. Sarn advised the committee that Dr. George B. Rowland had been employed by McAuto as a consulting medical director and that several other key people would begin employment within the next few weeks in order to perform ongoing reviews, educational processes, accreditations, and making determinations relating to grievances, quality of care, etc.

A lengthy discussion of the program followed and it was agreed that Dr. Sarn meet with the committee on an ongoing basis to discuss progress as well as problems which develop as the program becomes more functional.

Membership Survey

It was the consensus of those present that a two part questionnaire be developed which would (1) provide Dr. Sarn with specifics regarding problem areas which may have arisen by virtue of a physician's participation in the program and (2) provide the Association with a more thorough knowledge of member reaction to and feeling about the AHCCCS program. It was agreed that Drs. Scott and Sarn would work with ArMA staff during the next two or three weeks to develop a set of questions which could then be reviewed and finalized in a meeting of the committee for immediate distribution to the membership, with the thought in mind that, based on the findings of such survey, a resolution might be submitted to ArMA's House of Delegates during its May meeting for the establishment of a position regarding AHCCCS.

FINANCE COMMITTEE

The Finance Committee met on March 12, 1983.

It was moved and carried to increase the per diem allowance for the AMA Delegation from $120.00 per day to $150.00 per day.

The committee reviewed the proposed 1984 budget in considerable depth and, after making several changes, took the the following action:

It was moved and carried to recommend to the Board of Directors the adoption of the proposed 1984 budget as attached to these minutes. (A copy of the detailed breakdown can be obtained from the ArMA offices.)

LONG RANGE PLANNING COMMITTEE

The Long Range Planning Committee met on March 19, 1983.

The committee reviewed the letter, with attachments, from the Executive Committee concerning residency programs and the role ArMA might play in the continuance and improvement of those within the state. The committee felt that, because of the varied opinions relating to the number and quality of residency programs as well as the number of new physicians setting up practice, this matter deserved careful consideration.

It was moved and carried that the September 20, 1982 letter of the Executive Committee, together with the attachments, regarding residency programs be referred to both the Medical Education Committee and the Health Manpower Committee for consideration and report back to the Long Range Planning Committee as to whether ArMA should play any active role in assuring the continuance or improvement of residency programs within the state. They also asked that Dr. Kettel, Dean of the College of Medicine, be requested to discuss this subject as part of his activities report to the Board of Director on March 26, 1983.

The committee received the 1/22/83 approval by the Board of Directors of the new priorities for the goals of the Association. They reviewed the progress which had been made toward achieving these goals as well as the specific activities involved.

Goal I. To promote optimal health and medical services for the citizens of Arizona.

The committee determined that education of lay persons and physicians as well was the real key to achieving this goal. They discussed the ongoing activities of the Public Relations Committee in this regard and agreed that the committee or the ArMA Director of Communications be requested to pursue the possibility of securing program time on cable access channels as well as soliciting separate funding for same. Dr. Baker, as chairman of this committee, would write an article on wellness to be contained in a future *Medical Memo* and that the Scientific Assembly Committee be requested to consider conducting a "well adult" symposium for physicians, which might ultimately be developed for presentation to lay persons.

The AHCCCS program and its effect on the community as well as the medical profession was discussed. It was determined that the program was being carefully monitored by the Ad Hoc Indigent Health Care Committee.

Goal II. To determine the most effective organizational structure and communication mechanisms for the Arizona Medical Association.

The committee discussed the participation of specialty societies within the House of Delegates. Fourteen societies are currently represented and two additional societies have applied; their representation would most likely be granted by the House at its May meeting. Concern was expressed regarding contact with the remaining societies and it was agreed that the President of ArMA should meet with the presidents of each society on a personal level to discuss the desire of the Association to include all specialty societies. Dr. Collins agreed to make contact once again with both the Arizona Chapter of the Western Orthopedic Association and the Arizona Chapter of the American College of Emergency Physicians.

Goal III. To represent the entire medical profession, including medical students, in Arizona; such representation to include but not be limited to being the advocate of the membership with the Legislative, Administrative and Judical arms of the state government.

ArMA's involvement in legislative activities, ICA hearings, as well as recent study of the Medical Practice Act, and the proposed revisions of the JCAH standards were discussed at length by the Committee.

Goal IV. To expand the role of the Association in promoting and elevating the standards of medical ethics.

The committee was informed that the Scientific Assembly Committee would be considering at its April 9 meeting, the sponsorship of a bioethics seminar for physicians. Dr Meyer reported on attempts at various Valley hospitals to establish medical ethics committees and that the Kino Institute was interested in sponsoring a symposium on medical ethics. The committee asked Dr. Meyer to prepare a report on Kino Institute program for the Scientific Assembly Committee meeting.

The committee then discussed a mutual concern that there was a negative connotation in the wording of Goal IV and it was moved and carried to recommend to the Board of Directors that Goal IV of the Goals of the Arizona Medical Association be reworded as follows:

Goal IV. To expand the role of the Association in promoting the standards and clarifying the scope of medical ethics.

Goal V. To provide to individual members benefits and services to aid them in their professional pursuits.

To represent the membership in matters pertinent to the economics of medicine.

Goal VII. To represent the membership in matters pertaining to medical education, scientific affairs, and promotion of the art and science of medicine.

These three goals were discussed in conjunction with one another as they relate to the ongoing activities of the Governmental Services, Medical Economics and Scientific Assembly Committees.

Dr. Nilsen, an active participant in the coalition of medicine and industry established at the county level, expressed concern that there had been little interest shown by ArMA in the coalition activities. The committee wa apprised of the fact that status reports had recently been requested on the coalitions in both Maricopa and Pima Counties but as yet had not been received. It was determined that, sinc coalitions are currently being discusse by the Governmental Services Committee, it would be appropriate f Dr. Nilsen to meet with that committe on Wednesday, March 23, to discuss this and, hopefully, generate a committee recommendation regardin same to the Board of Directors.

MATERNAL AND CHILD HEALTH CARE COMMITTEE

The Maternal and Child Health Care committee met on March 19, 1983.

It was moved and carried that the Maternal and Child Health Care committee endorse the concept that the subcommittee on Perinatal Health 1) serve as an advisory committee to the Department of Health Services perinatal program, to function as such on a continuing basis, and act as a liason to the Arizona Perinatal Trust and other perinatal institutions and agencies, and 2) be charged with the responsibility of developing and establishing a statewide perinatal data collection, morbidity mortality review and institutional certification process i association with the education progra currently coordinated under the Arizona Perinatal Trust.

It was agreed that while reaction to the perinatal program was a very positive one an updated description o the program should be developed. Dr. Daily and Dr. Clement consented to jointly formalize a definitive statement which could then be distributed throughout the region for educational purposes.

The committee discussed their concern that many women and children may be denied care in the AHCCCS program because of eligibilit requirements. Dr. John Kelly apprised members of the many changes which have occurred at Maricopa Medical Center resulting from the AHCCCS program; and Dr. Scott, as chairman o the Ad Hoc Indigent Health Care Committee, reported on recent meetings with Dr. Sarn and the establishment of a review process which, hopefully, will promote good quality care within the program.

The committee reviewed Senate Bill 1264 which directs DHS to develop and administer programs in perinatal health care and was advised that the bill had passed the Senate unamended and would be heard by the House Committee on Health and Aging on March 21. Members were requested to ppear and be available to testify in vor of passage of this legislation.

Dr. Meyer updated the committee on e Arizona Perinatal Trust which is ontinuing some of the activities itiated by the Arizona Perinatal rogram under its original grant but, rimarily, the process of hospital esignation and consultation and utreach education. Dr. Meyer stated at because of the Trust's financial tuation staff had been reduced but e Trust was vigorously seeking dditional resources with which to ontinue.

Dr. Ziehm, the newly appointed airman of the Maternal Mortality ommittee, advised the members that e had refurbished the committee and ortly letters would be sent to ospitals reminding of the committee's kistence and the importance of eporting maternal deaths. He also said ere is an attempt to establish a ational committee on this subject.

The 1983 Annual Meeting of Districts and 9 of the American College of B/GNY will be held in Monterey, alifornia and the 1984 meeting will be eld at the Camelback Inn; Drs. Scott, chade and Shenker are involved in the lanning.

The Arizona Perinatal Society has ecently been formed to provide for reater communication among the rofessionals, scientific advancement, tc., the bylaws are in the process of eing developed and will be provided the committee when complete.

Dr. Baum reported on the activities of HS relating to the education and censing of midwives in the state. He ndicated there had been a notable ecline in problems since the ducation program had begun and robably in another year there would e between 45 and 50 licensed nidwives practicing in Arizona.

Dr. Comerci, on behalf of the Arizona Chapter of the American Academy of ediatrics, requested that calls be made Washington voicing opposition to roposed legislation that would nandate the withholding of federal unds from any hospital in which it was letermined that lack of care had been iven to newborns.

The Committee also discussed current Arizona legislation.

GOVERNMENTAL SERVICES COMMITTEE

The Governmental Services Committee net on March 23, 1983.

The chairman introduced Dr. Laurance . Nilsen who gave an update on urrent activities of the Greater Phoenix Affordable Health Care Coalition. He old the committee that the Coalition was formed to establish a rapport between business and the health care industry and to look at ways to contain cost. Another group was formed at the beginning of the legislative session, headed by four of the largest companies in Phoenix (Honeywell, Sperry, Garrett and Motorola) which forced introduction of four bills including HB 2437, a cost accounting bill for hospitals. The Coalition includes 9 private individuals, 6 hospital members, 5 physicians, a representative from Blue Cross, one representative from government and one from the unions. The physician members are Laurance B. Nilsen, Fred Christensen, John C. Bull, Jr., Robert V. Stephens and Derrill B. Manley. The group has put together a proposal for the Robert Wood Johnson Foundation concerning cost control. It is not known whether the proposal will be accepted. Some of the subcommittees of the Coalition are alternative delivery systems, data gathering, and information provisions. Dr. Nilsen said he would like to see a more open communication between the state Association and representatives of the county society. It was also suggested that Robert Westfall, M.D., President-elect of Maricopa County Medical Society, be included in ArMA meetings concerning this problem. The Health Planning Section was asked to develop a specific line of communication with the Coalition structure as Dr. Nilsen described it.

The committee discussed the current state Health Plan for 1982/87. An error was pointed out concerning the statistics in the Behavioral Health Section. Dr. Clement told the committee that the previous Health Plan was a 3-volume set and that he had been outspoken in getting it reduced to its current size. The committee agreed that it is too late for the current plan but that medicine should proceed now to try to attain a leadership role in the next one.

It was moved and carried to refer, for their consideration, the state Health Plan to our Health Planning section, as a work group, for the purpose of looking into the general principles of the plan and giving practicality to these principles. This section will report back to Governmental Services and be in communication with Dr. Clement and Dr. Sarn along the way.

It was moved and carried to recommend to the Legislative Committee that ArMA should not support the extension of the Certificate of Need Process.

It was moved and carried to refer the maternal child health and behavioral health questions to the appropriate sections to recommend a role for ArMA and to decide how funds should be managed and have the Health Planning section take over the block grants, defining a role for ArMA and deciding how the money should be spent.

The following were recommended to sit on the Health Planning section subject to their individual approval: Suzanne E. Dandoy, M.D, Robert F. Crawford, M.D, Louis C. Kossuth, M.D, Leonard F. Peltier, M.D, Wallace A. Reed, M.D, Bruce H. Shelton, M.D., and Mrs. Eugene Rounseville.

The following were recommended to sit on the section of Rules and Regulations, subject to their individual approval: Louis C. Kossuth, M.D., Donald R. Miles, M.D., Robert St. John, M.D. and George S. Woodard, Jr., M.D. Dr. Clement was asked to be a liaison member of both the above sections.

EXECUTIVE COMMITTEE

The Executive Committee met on March 25, 1983.

Dr. Sarn, the Director of the Arizona Department of Health Services, discussed with the committee current activities of the department relating to AHCCCS, indicating that pending legislation looks promising, the budget still is questionable, and there are currently discussions being carried on relating to inclusion of a certain portion of the Indian population not already eligible under the program. Dr. Sarn stated that the review aspects of the program were developing well and expressed his sincere appreciation for the efforts and assistance of ArMA's Ad Hoc Indigent Health Care Committee. Additionally, Dr. Sarn commented briefly on two other current problems being faced by DHS at the present time; i.e., Salmonella and the environmental issue in Tucson.

Mr. Robinson advised that the Arizona Medical Association Auxiliary had recently discussed with him the rental of office space in the Association building. It was moved and carried to approve the allocation of office space within the Association building to the Arizona Medical Association Auxiliary for its exclusive occupancy and use.

It was moved and carried that the newsletter of Marathon Steel Company, "Benefitsletter," for the first quarter of 1983 be referred to the Long Range Planning and Public Relations committees for their information and review.

Mr. Robinson reported on recent discussions with Charles Brecher, Ph.D., of New York University, who is doing research on the AHCCCS program, as well as the Wisconsin Legislature's current consideration of a similar progam.

Similarly, Dr. Oakley reported on a recent meeting he had with a legislative analyst from the American Legislative Exchange Council on the subject to AHCCCS.

Mr. Walker reported on the AHCCCS Bidders' Conference held on March 25, 1983.

The committee received from Dr. Earl Baker a proposed position paper on the Present Status of the Arizona Medical Practice Act and its Relationship to the Natural Healing Arts, a summary of the draft bill entitled "Health Practitioners; Registration," and an update on legislative activity regarding this matter. It was determined that Dr. Baker should carry this information to the Board of Directors meeting on March 26.

Dr. Collins expressed concern on the designation of "Medical Doctor." He sited two items in the agenda packet as examples that the correct usage of "M.D." following a physician's name was not always adhered to and after a brief discussion by the committee, it was determined that an article be included in a future *Medical Memo* setting forth the standard procedure prescribed by the American Medical Association for use of the title of M.D.

BOARD OF DIRECTORS

Board of Directors met on March 26, 1983.

Mary Lee Collins, president of the Arizona Medical Association Auxiliary, reported to the Board on a recent seminar conducted on substance abuse in the school, continuing efforts with Health Occupations to produce an informative "Health Careers" chart, planning for their annual meeting to be held in conjunction with ArMA, as well as the Auxiliary's desire to rent office space and establish a permanent location for carrying on Auxiliary activities.

Dr. Meredith, chairman of ArMPAC, addressed the Board about ArMPAC membership and the concerns of his committee relative to their inability to speak to county societies and hospital medical staffs. Additionally, Dr. Meredith presented for Board consideration the idea of hiring additional staff to be responsible for the solicitation and recruitment of new members, which is a time consuming effort, and requested financial assistance from as well as Board approval for such endeavor. Following discussion by the members, it was moved and carried that the ArMPAC Board of Directors continue its efforts, via the assistance of the District Directors, to meet and speak with the county medical societies and hospital medical staff regarding the broad scope of legislation affecting the medical profession and increased membership in ArMPAC if efforts are to be effective and to, additionally, request that the ArMPAC Board of Directors determine a specific budget amount which would be required to proceed with the hiring of staff for solicitation and recruitment of new members, with a report on both items to be brought back to the board.

The date for the annual meetings of the House of Delegates in 1984 and 1985 are to be April 26-28 at the Scottsdale Conference Center and April 25-27 at the Cottonwood Hotel, respectively.

On the subject of business/medicine coalitions correspondence was received from Dr. Hirsch relative to the Tucson Program for Affordable Health Care and a brief report by Dr. Kurtz on activities of the Greater Phoenix Affordable Health Care Consortium. At the request of the Board, Ron Krause, president of ArHA, reported on the status of the business coalition's movement relating to passage of legislation during the current session which would have great impact on Arizona hospitals and health care in general.

Dr. Zonis addressed the Board stating that their seemed to be communication gaps between the Board of Medicial Examiners and the Arizona Medicine Association. Both being concerned with health care in the state of Arizona but sometimes the positions taken are in direct conflict. Following a lengthy discussion by the Board and with Doug Cerf, Executive Director of BOMEX, it was agreed that a greater effort would be made by the two organizations to jointly discuss and study issues of concern prior to taking formal position to see if a mutually agreeable position could be found.

It was moved and carried to ratify and approve the minutes of the Executive Committee Meetings held January 21, 1983 and February 25, 1983.

It was moved and carried to approve the elevation of Guy B. Atonna, M.D., Angus J. DePinto, M.D., and V. Eugene Frazier, M.D. to membership in the Fifty Year Club, with presentation of appropriate awards to be made during the 1983 annual meeting.

It was moved and carried to accept and approve the proposed 1984 budget for submittal to the House of Delegates during the 1983 annual meeting.

A letter dated 2/22/83 from the Department of Health & Human Services acknowledging ArMA's interest in being named the Peer Review Organization (PRO) for the state of Arizona was received for information.

It was moved and carried to accept and forward to the House of Delegate for consideration during the 1983 annual meeting, the annual reports received to date from the following: Articles of Incorporation & Bylaws Committee, AMA Delegation, AMA Delegate (Dr. Zonis), ArMPAC, Benevolent & Loan Fund Committee, Central District Director (Dr. Munhall) Central District Director (Dr. Nieri), Claim Review Committee, Editor-In-Chief, Executive Vice President, Health Manpower Committee, Medical Education Committee, Northwestern District Director (Dr. Sosey), Physician' Health Committee, Public Relations Committee, Southeastern District Director (Dr. Dregseth), Southern District Directors, Underwriting Review Committee, Legislative Committee, Grievance Committee, Past President, Medical Economics Committee, Ad Ho Malpractice Insurance Crisis Committee, and Nominating Committee.

It was moved and carried that the Board of Directors of the Arizona Medical Association cosponsor, with Ja S. Fleishman, M.D., Delegate for Arizona Society of Pathologists, resolution No. 5-83 regarding discontinuance of reqiurement for premarital syphilis serology testing.

It was moved and carried to confirm the appointment of Donald C. Waugh, M.D. as a member of the Physician's Health Committee for the term 1983-86

It was moved and carried to approve the 3/19/83 recommendation of the Long Range Planning Committee that Goal IV of the Goals of the Arizona Medical Association be changed to read in its entirety: "Goal IV. To expand the role of the Association in Promoting the standards and clarifying the scope of medical ethics."

SCIENTIFIC ASSEMBLY COMMITTEE

The Scientific Assembly Committee met on April 9, 1983.

The programs for 1981-82 and 1982-83 were reviewed along with itemization of income and expense for the 1982-83 series. There was a definite increase in attendance during the 1982-83 series. The committee felt that it was important to determine how many people attended more than one program. Since the sponsorship was les than anticipated the pharmaceutical companies would again be contacted. I was also felt that the specialty societies should be contacted following the ection of topics and chairmen to see any of their members desired to rticipate in any of the programs.

was moved and carried to prepare evaluation form for use in the Current Perspectives" series, the ntent for which would be similar to at contained on the form being ilized by Phoenix Baptist Hospital and edical Center and, additionally would corporate a request for the area of edicine in which the attendee actices.

t was moved and carried that the mpletion of the evaluation form ould be mandatory prior to receiving ME credit for attendance at "Current erspectives" programs.

he committee received and reviewed veral recommendations or offers for ossible future programs. Also they ceived a proposal by H. Belton P. eyer, M.D. regarding the bioethics minar recommended by ArMA's oard of Directors on January 31. Dr. ker expressed the thoughts of the ng Range Planning Committee ncerning the sponsorship of a "well lult" symposium.

t was moved and carried that one of e first program to be held during the 83-84 "Current Perspectives" series ould be on the subject of bioethics, ith serious consideration being given taping the program for dissemination roughout the state.

t was moved and carried that the 83-84 "Current Perspectives" series e comprised of a total of seven ograms, one being held in each onth, beginning with October 1983 nd running through April 1984, the tter of which would be held in njunction with the annual business eeting of ArMA's House of Delegates, ith two such programs being held in ucson and five in Phoenix.

The committee developed a list of fteen topics and then by vote six rograms were selected. They selected hysicians to be contacted to chair ach program and determined the date nd place each would be held as llows:

Bioethics; W. Scott Chisholm, M.D; ctober (Saturday); Phoenix.

Diseases of Arizona, including cocci; Villiam S. Nevin, M.D. or Wilber C. oss, M.D.; November (weekday); ucson.

Cerebral vascular diseases; Timothy R. larrington, M.D.; December veekday); Phoenix.

Allergy; Luis S. Tan, M.D., January veekday); Phoenix.

Cancer; Jay S. Fleishman, M.D.; ebruary (Saturday); Tucson.

Diabetes; Philip Levy, M.D.; March veekday); Phoenix.

Well adult and aging; Earl J. Baker, M.D.; April (weekday); Phoenix.

It was determined that when the above named physicians are contacted about agreeing to chair the specified programs they be requested to present to the entire committee a proposed program format, including speakers, for committee acceptance and approval. This will be done at the July 1983 meeting.

The committee agreed that the topics not selected would be held in file for the planning of the 1984-85 series. It was also decided that next year when this topic selection meeting is held those not being able to attend should submit their suggestions in writing.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

MAY

Obesity and Nutrition
May 14. University of Arizona Health Sciences Center. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 8 hours of Category 1 credit.

Current Perspective VII: Drug and Alcohol Abuse
May 19. Doubletree Hotel, Tucson. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, ArMA, 810 W. Bethany Home Road, Phoenix, Arizona 85013. (members no charge—nonmembers $20). Approved for 3½ hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
May 18-20. ArMA Offices, Phoenix. Sponsor: ACLS, AZ Affiliate American Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter, American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, AZ 85013. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Sixth Annual Arizona Patient/Health Education Conference and Arizona Public Health Association Spring Meeting
May 19 & 20. Radisson Scottsdale Resort. Sponsor: Arizona Department of Health Services Office of Health Education, Arizona Public Health Association, Arizona Academy of Family Physicians, et al. Contact: Arizona Department of Health Services, Office of Health Education at (602) 255-1008.

JUNE

6th Annual Summer Pediatric Conference Infectious Diseases and Trauma
June 10-12. Sedona, Arizona. Sponsor: College of Medicine University of Arizona. Contact: Office of Continuing Medical Education and Outreach. U. of A. Health Sciences Center, Tucson, AZ 85724.

Advanced Cardiac Life Support Recertification/Provider
June 23-25. Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

26th ANNUAL RUIDOSO FAMILY PRACTICE SEMINAR

July 18-21, 1983

Inn of the Mountain Gods
Mescalero, New Mexico

Sponsors: New Mexico Academy of Family Physicians. Accreditation is 20 hours Prescribed credit by the AAFP, 20 hours Category I by AMA, and Category IV Required by New Mexico CME.
For further information contact Brenda Gray, Executive Secretary, NMAFP, 6520 Northland Ave. NE, Albuquerque, NM 87109.
Telephone for out-of-state calls is 1-800-545-9011, in-state calls 505-257-5141.

SUMMER CME CRUISE/CONFERENCES ON LEGAL-MEDICAL ISSUES

Alaskan, Caribbean, Mediterranean. Ten and fourteen days in July and August. Approved for 24 CME Category 1 credits (AMA/PRA). Distinguished professors. Fly round-trip FREE on Caribbean and Alaskan cruises. Excellent group fares on finest ships. Registration limited. Scheduled prior to 12/31/80—Tax-deductible under 1976 Tax Reform Act. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Indian Hospital,
2nd Tues.— Maricopa County Hospital,
3rd Tues.—Good Samaritan Hospital,
4th Tues.—St. Joseph's Hospital.
Sponsor: Maricopa Medical Center (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Ravi Koopot, M.D.

Clinical Conference
Cardiovascular Medicine
Third Tues., 5:15 p.m., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Martin B. Kassell, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff

Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.

Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.

Surgical Department CME
4th Friday, 7 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M
Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona Contact: L.A. Rosati, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENI

1747 East Thomas Road, Phoenix, Arizon
86016 Contact: Medical Staff Secretary fo
additional information.

Physicians Continuing Education Progran
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712 Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ
Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E

Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

lmonary Grand Rounds
eekly, Monday, 12 noon- 1 p.m., nphitheater.

mily Practice
eekly, Monday, 12:00-1:00 p.m., Family actice Center.

diatric Grand Rounds
t & 3rd Tuesday, 7:30-8:30 a.m., nphitheater.

mily Practice
eekly, Tuesday, 12:00-1:00 p.m., Family actice Center.

rdiology Grand Rounds
eekly, Tuesday, 12:00-1:00 p.m., nphitheater.

edical Noon Conference
t, 2nd, 4th, & 5th Wednesday, 12:00-1:00 m., T-8 Conference Rm.

inical Cancer Fourm
d Wednesday, 12:00-1:00 p.m., Conf. ns. E-F.

mily Practice
eekly, Wednesday, 12:00-1:00 p.m., mily Practice Center.

mor Conference
d, & 4th Wednesday, 12:00-1:00 p.m., onf. Rms. E-F.

rgical Grand Rounds
eekly, Wednesday, 7:00-8:30 a.m., nphitheater.

mily Practice
eekly, Thursday, 12:00-1:00 p.m., Family actice Center.

edical Noon Conference
eekly, Thursday, 12:00-1:00 p.m., T-8 onf. Rm.

int Tumor Gyn Conference
d Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

edicine Grand Rounds
eekly, Friday, 8:00-9:00 a.m., nphitheater.

eurology Grand Rounds
eekly, Friday, 12:00-1:00 p.m., nphitheater.

ychiatry Grand Rounds
eekly, Friday, 11:00-12:00 noon, Conf. n. E.

KINO COMMUNITY HOSPITAL (THMEP)

00 E. Ajo Way, Tucson, AZ 85713. ontact: Eric C. Ramsay, M.D., Approved Category 1 credit.

rgical Conference
eekly, Monday 8:00 a.m., Contact: Fischer, M.D.

edical Conference
eekly, 12:30 p.m., Contact: Chief Medical esident.

B/GYN Pathology Conference
eekly, Thursday, 1:30 p.m., Contact: y Fleishman, M.D.

sychiatry Journal Club
eekly, Thursday, 12 Noon, Contact: ose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

02 W. Campbell Ave., Phoenix, AZ 85008

ontinuing Medical Education Program
nd & 4th Wednesday, 12:30 p.m., onference Rms.

umor Board
st & 3rd Mondays, 12-1 p.m., Medical onference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m., Santa Cruz Room, Contact: George Wallace, M.D.

Medicine Conference
Daily 12-1 p.m., Contact: S. Schaffner, M.D.

Chest Surgery Conference
Weekly, Mondays, 1:30 p.m., Santa Cruz Room.

Hepatology Conference
2nd Tuesday, 1:00 p.m., Contact: Stephen Winograd, M.D.

OB/GYN Dept. Grand Rounds
Weekly, Tuesday, 12 Noon, Santa Cruz Room.

Obstetrical Problem Conference
Weekly, Tuesday, 7:30 a.m., Yavapai Rm.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 a.m., Contact: Robert Ganelin, M.D.

Urology Discharge Planning Conference
Weekly, Tuesday, 11:30 a.m., Station 42.

Hand Surgery Conference
Weekly, Wednesday, 7:30 a.m., Santa Cruz Room.

Neurosurgery Discharge Planning
Weekly, Wednesday, 1:30 p.m., Station 42.

OB/Neonatology Seminar
Weekly, Wednesday, 7:30 a.m., Yavapai Rm.

Clinical Psychiatric Conference
Weekly, Wednesday, 11-12 p.m., Mental Health Annex, Rm. 1346.

Surgery Conference
Weekly, Wednesday, 7-8 a.m., Surgical Dept.

Current Concepts in Medicine & Surgery
1st Thursday, 1 p.m., Dr. Hospital Class Rm., Contact: Dr. Tamsky.

Cardiology Conference
Weekly, Thursday, 2 p.m., Santa Cruz Room.

OB/GYN Resident Conference
Weekly,Thursday, 12 p.m., Yavapai Rm.

GYN Endocrine Seminar
1st & 3rd Friday, 12:30 p.m., Santa Cruz Room.

OB/GYN Surgical Pathology Conf.
Weekly, Friday, 7:30 a.m., Yavapai Rm.

Orthopedic X-Ray Conference
Weekly, Friday, 7:30 a.m., Santa Cruz Room.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201. Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.

Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference Rm. A, Contact: N. Wendell Todd, M.D.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st floor Conf. Rm.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
3rd Tuesday, 12 p.m., Contact: Wm. Monteforte.
Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 p.m., Contact: Kim Sowards.
Current Concepts in Medicine
Weekly, Tuesday, 12 p.m., Auditorium.
Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 p.m., Contact: S. Salmon, M.D.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ, Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

TUCSON MEDICAL CENTER (THMEP)

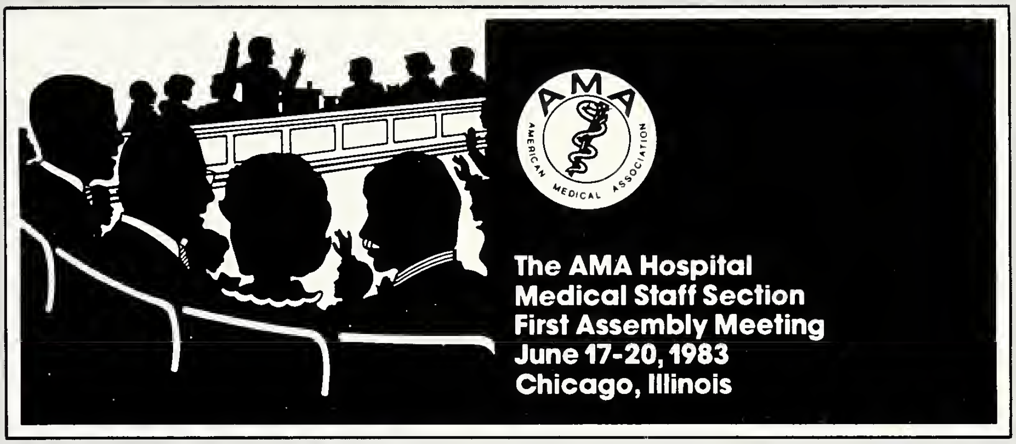
5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Perinatal Conference
2nd Monday, 7:30 p.m., Contact: J. Lohman, M.D.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Surgical Dept. Conference
2nd Monday, 12 Noon, Contact: C. Peter Crowe, Jr., M.D.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conferenc
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5 Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

AMA Hospital Medical Staff Members:

Strengthen Your Role In Decision-Making... Influence AMA Policy!



The AMA Hospital Medical Staff Section First Assembly Meeting June 17-20, 1983 Chicago, Illinois

As a Hospital Medical Staff Representative, you should plan now to attend this four-day AMA Hospital Medical Staff Section Assembly Meeting. You will have an opportunity to contribute to the decision-making process and participate in developing policy that will address the issues and concerns of physicians on hospital staffs.

The AMA Hospital Medical Staff Section will provide representatives from hospital medical staffs with a forum to discuss common problems and changes in Physician-Hospital Relations, and a direct voice in policies being considered by the American Medical Association.

Group sessions will be conducted on various topics of interest to hospital medical staff members. Potential issues for discussion include: medical staff representation, staff privileges, and overall relationships between physicians and hospitals.

Here's your opportunity to effect change. For information contact the AMA Department of Hospital Medical Staff Services at (312) 751-6476.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4-5 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

References.
1. Stone PH Tun ZG Muller JE Efficacy of nifedipine therapy for refractory angina pectoris *Am Heart J* 104 672-681. September 1982
2. Antman E Muller J Goldberg S et al Nifedipine therapy for coronary-artery spasm Experience in 127 patients *N Engl J Med* 302 1269 1273 June 5 1980

BRIEF SUMMARY
PROCARDIA (nifedipine) **CAPSULES** For Oral Use

INDICATIONS AND USAGE: I. Vasospastic Angina PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria 1) classical pattern of angina at rest accompanied by ST segment elevation 2) angina or coronary artery spasm provoked by ergonovine or 3) angiographically demonstrated coronary artery spasm In those patients who have had angiography the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina provided that the above criteria are satisfied PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed e g where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and or adequate doses of beta blockers

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and or organic nitrates or who cannot tolerate those agents

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina but available information is not sufficient to predict with confidence the effects of concurrent treatment especially in patients with compromised left ventricular function or cardiac conduction abnormalities When introducing such concomitant therapy care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS Known hypersensitivity reaction to PROCARDIA

WARNINGS Excessive Hypotension Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated occasional patients have had excessive and poorly tolerated hypotension These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers

Severe hypotension and or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker but the possibility that it may occur with PROCARDIA alone with low doses of fentanyl in other surgical procedures or with other narcotic analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated the physician should be aware of these potential problems and if the patient s condition permits. sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery

Increased Angina Occasional patients have developed well documented increased frequency duration or severity of angina on starting PROCARDIA or at the time of dosage increases The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate or from increased demand resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina probably related to increased sensitivity to catecholamines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is important to taper beta blockers if possible rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure Rarely patients usually receiving a beta blocker have developed heart failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS. General: Hypotension Because PROCARDIA decreases peripheral vascular resistance careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested Close observation is especially recommended for patients already taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema: Mild to moderate peripheral edema typically associated with arterial vasodilation and not due to left ventricular dysfunction occurs in about one in ten patients treated with PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuretic therapy With patients whose angina is complicated by congestive heart failure care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated. but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates but there have been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers The average increase was 45% Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured digitalis toxicity was not observed Since there have been isolated reports of patients with elevated digoxin levels it is recommended that digoxin levels be monitored when initiating adjusting and discontinuing PROCARDIA to avoid possible over or under-digitalization

Carcinogenesis mutagenesis impairment of fertility When given to rats prior to mating nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity in rats embryotoxicity in rats mice and rabbits and abnormalities in monkeys

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness. peripheral edema nausea weakness headache and flushing each occurring in about 10% of patients transient hypotension in about 5% palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication Additionally the following have been reported muscle cramps. nervousness. dyspnea. nasal and chest congestion diarrhea constipation inflammation. joint stiffness. shakiness sleep disturbances blurred vision difficulties in balance dermatitis pruritus urticaria fever sweating chills and sexual difficulties Very rarely introduction of PROCARDIA therapy was associated with an increase in anginal pain possibly due to associated hypotension

In addition. more serious adverse events were observed not readily distinguishable from the natural history of the disease in these patients It remains possible however, that some or many of these events were drug related Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare mild to moderate transient elevations of enzymes such as alkaline phosphatase CPK LDH SGOT. and SGPT have been noted and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy is uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis possibly due to PROCARDIA therapy has been reported twice in the extensive world literature

HOW SUPPLIED: Each orange soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66) 300 (NDC 0069-2600-72). and unit dose (10x10) (NDC 0069-2600-41) The capsules should be protected from light and moisture and stored at controlled room temperature 59 to 77 F (15 to 25 C) in the manufacturer s original container

More detailed professional information available on request c 1982. Pfizer Inc

Pfizer LABORATORIES DIVISION
PFIZER INC

"I can do things that I couldn't do for 3 yrs. including joining the human race again."

Quotes from an unsolicited letter received by Pfizer from an angina patient.
While this patient's experience is representative of many unsolicited comments received, not all patients will respond to Procardia nor will they all respond to the same degree.

© 1983, Pfizer Inc.

"My daily routine consisted of sitting in my chair trying to stay alive."

"My doctor switched me to PROCARDIA[*] *as soon as it became available. The change in my condition is remarkable."*

"I shop, cook and can plant flowers again."

"I have been able to do volunteer work...and feel needed and useful once again."

PROCARDIA can mean the return to a more normal life for your patients—having fewer anginal attacks,[1] taking fewer nitroglycerin tablets,[2] doing more, and being more productive once again.

Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).

for the varied faces of angina

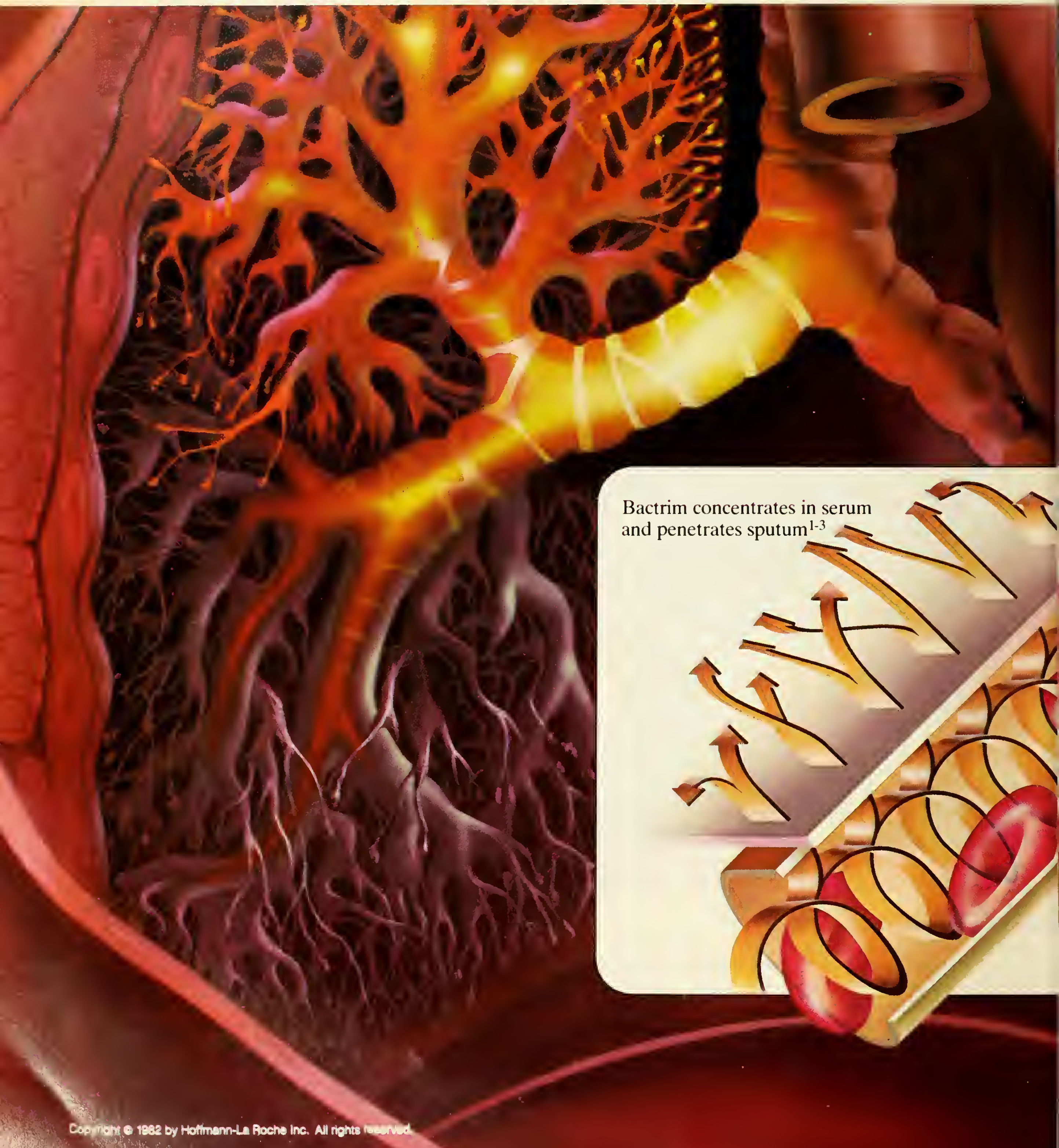
PROCARDIA®

(NIFEDIPINE) *Capsules 10 mg*

Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
2) Angina where the clinical presentation suggests a possible vasospastic component.
3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Please see PROCARDIA *brief summary on adjoining page.*

Bactrim™ attacks th
(trimethoprim and sulfamethoxazole/Roche)
in acute exacerbation



Bactrim concentrates in serum and penetrates sputum[1-3]

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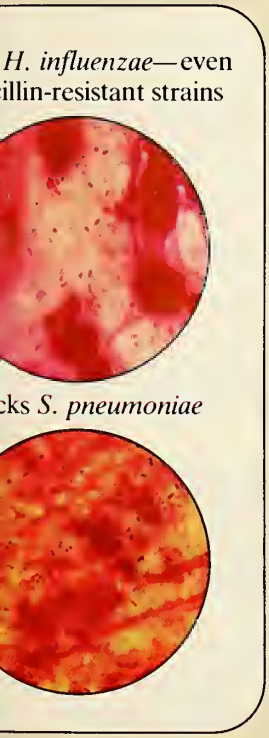
ajor pathogens
f chronic bronchitis*

Bactrim clears sputum of susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.[4,5] One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.[5]

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.[6]


H. influenzae—even
illin-resistant strains

cks *S. pneumoniae*

Bactrim reduces coughing and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.[7-9] Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

Bactrim also proved more effective than tetracyclines in 10 clinical trials involving nearly 700 patients.[10] Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: 1. Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother I/2*:1105-1106, 1971. **2.** Jordan GW *et al: Can Med Assoc J 112*:91S-95S, Jun 14, 1975. **3.** Beck H, Pechere JC: *Prog Antimicrob Anticancer Chemother 1*:663-667, 1969. **4.** Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts;* Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. **5.** Schreiner A *et al: Infection* 6(2):54-56, 1978. **6.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **7.** Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts. Op. cit.*, pp. 15-16. **8.** Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. **9.** Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. **10.** Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

Economical
b.i.d.

Bactrim™ DS
(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

*Due to susceptible organisms. **Please see next page for summary of product information.**

Bactrim™

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note.* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy. Teratogenic Effects: Pregnancy Category *C.* Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d for 10-14 days. Use identical daily dosage for 5 days for shigellosis

Children Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS.

Usual adult dosage. 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage. 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table

Supplied: *Double Strength (DS) tablets,* each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100, Tel-E-Dose® packages of 100; Prescription Paks of 20 and 28 *Tablets,* each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100, Prescription Paks of 40. *Pediatric Suspension,* containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml), cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension,* containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

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st Monday, 4-5 p.m., AHSC Dining Room, &D, Contacts: Drs. Otto & Zehngut.

ancer Center Tumor Board Seminar
rd Tuesday, Monthly, 12-1 p.m., HSC uditorium, Contact: Cancer Center.

ardiac Catheterization Conference
Veekly, Friday, 4:00 p.m., Contact: r. Temkin.

ardiology Research Conference
Veekly, Tuesday, 7:30 a.m., Contact: Dr. oeske.

ucson Cardiovascular Society
st Thursday, 6:00 p.m., AHSC, Contact: r. Byrne-Quinn.

linical Immunology, Allergy & heumatology Rounds
very Friday, Noon-1 p.m. Contact: John oyer, M.D., Dept. of Internal Medicine.

erebrovascular Disease Conference
Mondays, 5-6 p.m., Weekly, Rm. 5505., ontact: Jerry Goldstone, M.D., Dept. of urgery.

ermatology Conference
th Monday, 5:15 p.m., AHSC, Contact: r. R. Friedman.

ermatology Rounds
Veekly, Wednesday, 11:30 a.m., Contact: r. Lynch.

ar, Nose & Throat Conference
Veekly, Wednesday, 4 p.m., Contact: r. S. Coulthard

ndocrinology Seminar
Veekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P.C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C.D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C.D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
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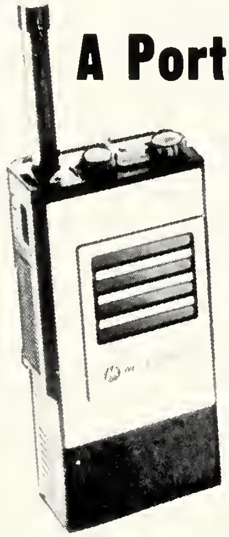

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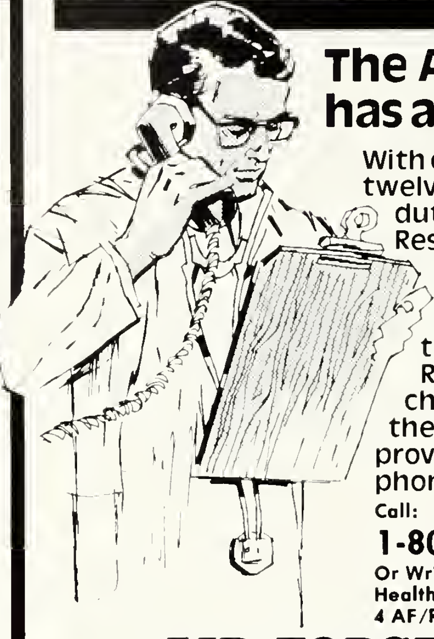

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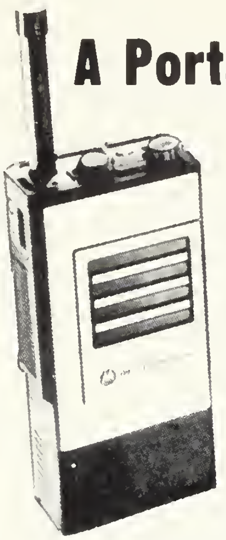

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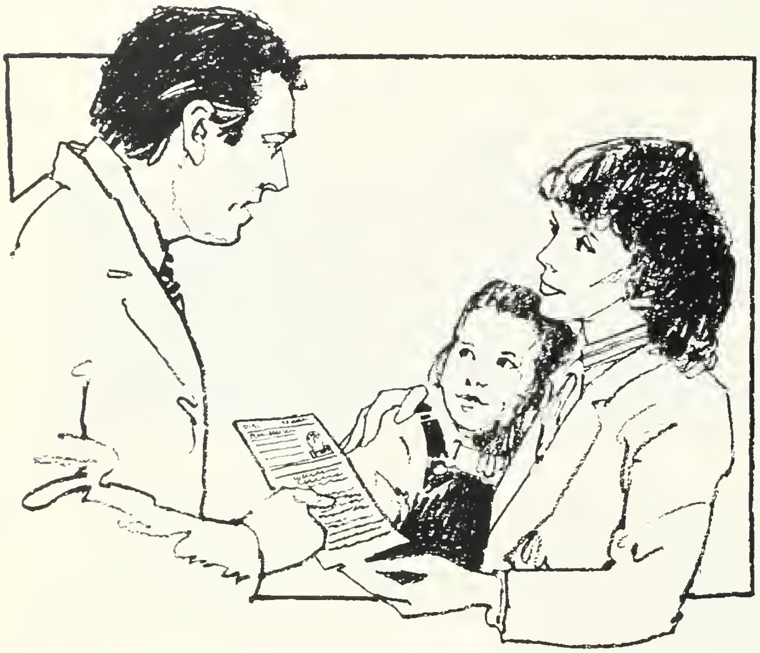

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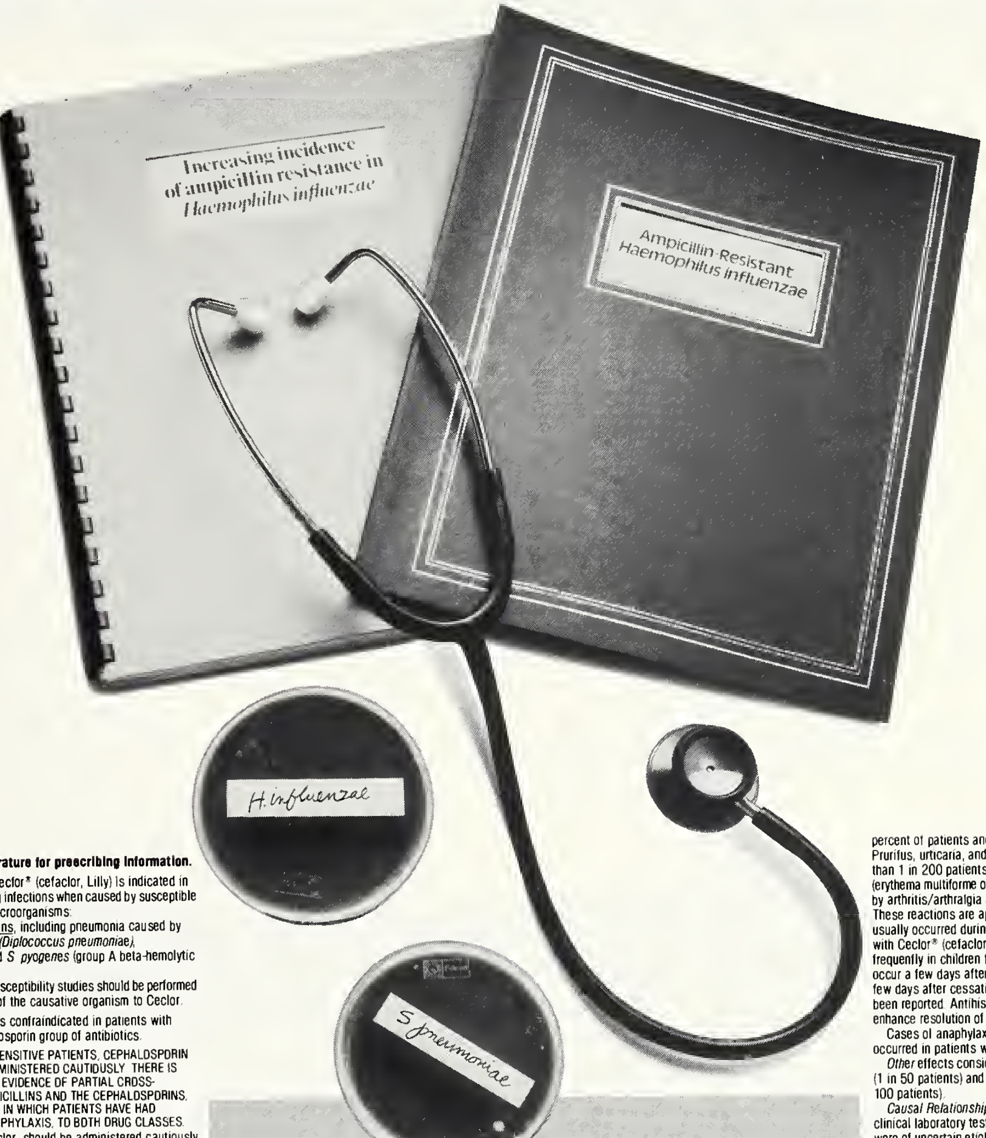

Increasing incidence of ampicillin resistance in Haemophilus influenzae
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S. pneumoniae

Brief Summary.
Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coomb testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy—Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Ceclor.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor® (cefaclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [100281R]

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

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cefaclor

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*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.[8]

Note. Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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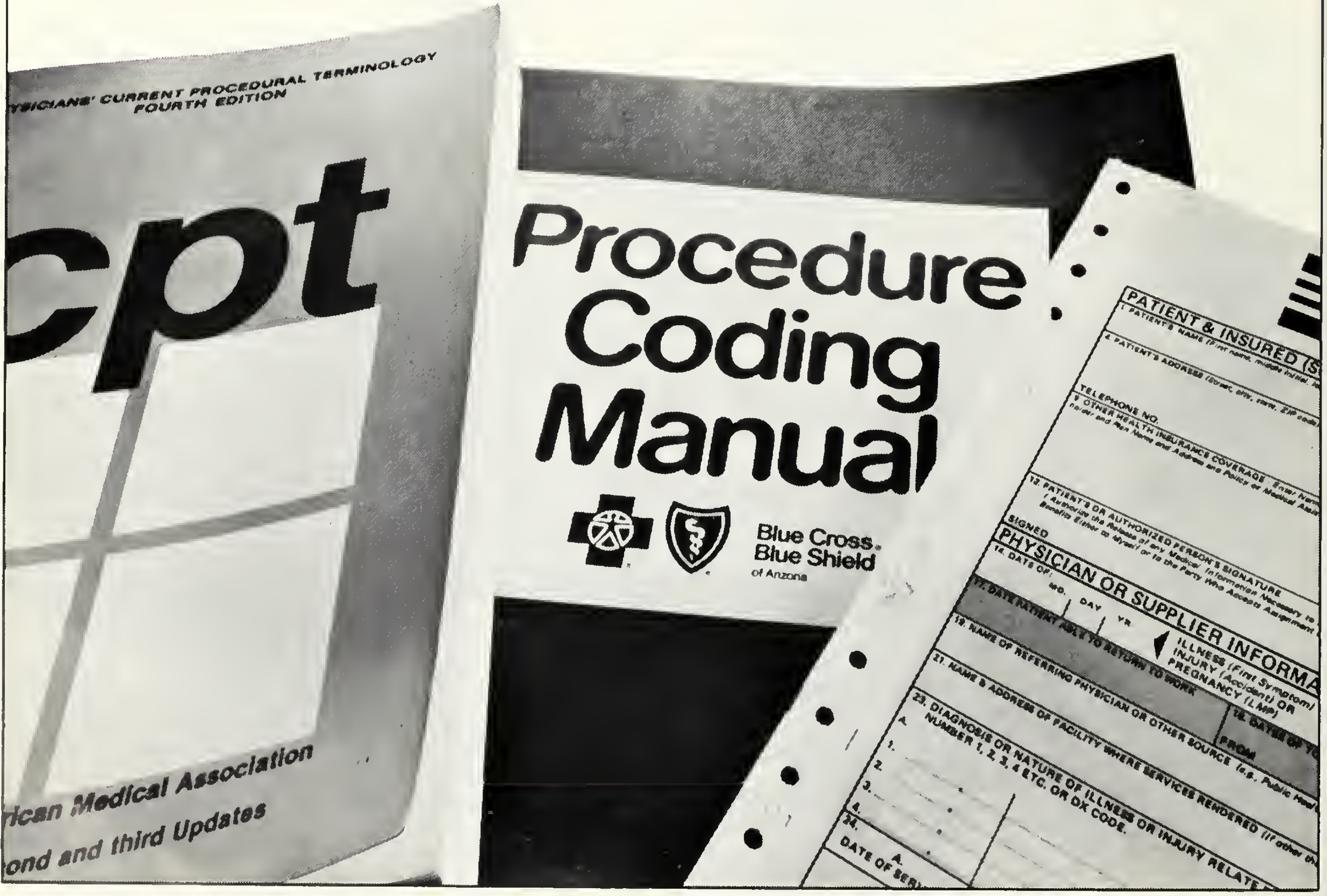

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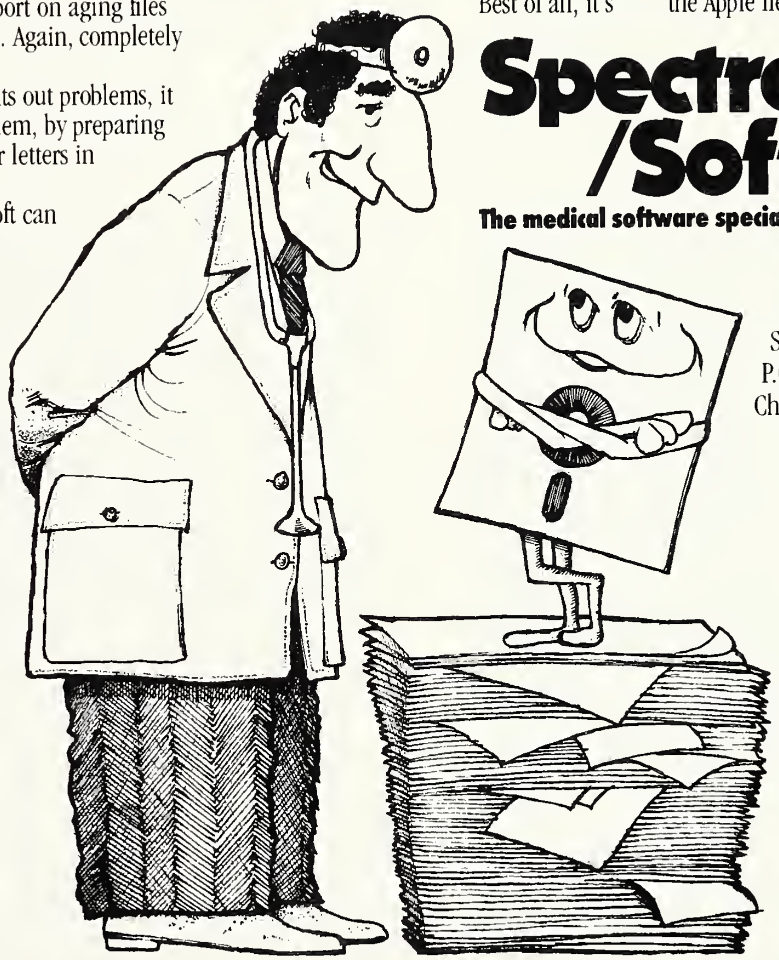

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Isometric Exercise—A Danger or a Benefit?

Lawrence P. Temkin, M.D.

Abstract

In the present age of increased patient awareness and curiosity regarding the relationship of exercise to cardiovascular health and rehabilitation, the clinician is frequently asked for recommendations, prescriptions, and proscriptions for individual vocational, recreational, and therapeutic physical activity. Although the cardiac effects of dynamic exercise (i.e., muscle work associated with motion) have been widely studied and publicized, less well appreciated are the comparable physiologic responses to isometric stress (i.e., static muscle strain). Indeed, past communications have emphasized the potential dangers of isometrics to patients with heart disease[1] and have suggested that this form of exertion be broadly restricted in the presence of illness. This paper will attempt to review the current understanding of the hemodynamic consequences of isometric stress and attempt to bring into perspective its potential role and hazards in cardiac patients.

Isometric stress may best be defined as the development of tension within a muscle without significant change in the length of its fibers. By this action no motion or external work are accomplished (e.g., pushing forcefully against a stationary object or sustained clenching of the fist). It has been appreciated that such static exertion may lead to muscle fatigue. In addition, early observation suggested that profound blood pressure and heart rate alterations accompanied this activity.

Lind et al.[2] extensively studied the hemodynamic responses to sustained isometric hand grip in normal individuals and attempted to quantitate the degree isometric tension developed in a muscle group as percentage of the maximum voluntary contractic (MVC) force generated at peak effort. This ar subsequent investigations have noted that with seconds after the onset of isometric stress the heart ra increases as a result of vagal withdrawl. Pretreatme with atropine inhibits the development of tachycard and beta blockade with propranolol has no effect on th phenomenon.[3] With contractions of 10% to 20% MV the heart rate increase will plateau within two to thre minutes but in contractions of greater intensity (great than 20% MVC) the heart rate acceleration will continu for as long as the contraction is maintained with arteri systolic and diastolic pressures markedly increased wit consequent augmentation of mean blood pressur These pressor responses will similarly plateau wit sustained contractions of less than 20% MVC, bu continue to rise potentially to markedly hypertensiv levels with more forceful contractions. It was elegant demonstrated by Lind and McNicol[4] that the degree the generated pressor responses was proportional to th relative force and duration of the sustained muscl contraction and not to the bulk of the musculatur exercised. This translates to the fact that if isometri contractions are held simultaneously in the arm and th leg, the degree of blood pressure elevation elicited wi be determined by that muscle group exerting a highe percentage of its maximal voluntary contraction. Th response is not predicated on the additional bulk muscle mass under stress.

In normal men the heart rate and pressor response are accompanied by increases in cardiac output wit little change in ventricular stroke volume. Therefore the increased output is a reflection solely of increase heart rate. Additionally, in normals the increase in bloo

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From: University of Arizona Health Sciences Center, Section of Cardiology, Department of Internal Medicine, Tucson, Arizona. Reprint requests to Lawrence P. Temkin, M.D., Section of Cardiology, University of Arizona Health Science Center, Tucson, Arizona 85724.

ssure and cardiac output is not associated with nificant change in the measured peripheral arterial cular resistance. Blood flow to the exercising limb reases presumably in an autoregulative local vaso- atory attempt to maintain perfusion to the muscle up rendered ischemic by the stress. Decreased scle blood flow accompanies contraction of greater n 15% MVC leading to fatigue. Stress of greater than % MVC will completely occlude flow to the limb. If odilatation occurs in the exercising limb and total ripheral arterial resistance remains unchanged, mpensatory vasoconstriction must occur in nonexer- ing vascular beds.

The hypertensive responses to isometric stress lead to marked increase in left ventricular wall stress. The rmal ventricle is capable of maintaining normal stroke lume under this increased afterload with only minimal crease in ventricular end diastolic pressure.[5] In ntrast to the normal heart, in patients with congestive art failure and marginally compensated or de- mpensated left ventricular function, isometric stress ay lead to a significant decrease in stroke volume[5] and substantial elevation of end diastolic pressure.[6,7] In dition, in these patients where cardiac output may not crease in response to isometrics, the marked pressor sponse may be substantially mediated through creased peripheral vascular resistance.[8] The echanisms responsible for the pressor and vascular sponses observed are not fully understood. It would pear, however, that the accumulation of metabolites the isometrically contracted muscle initiate the ferent limb of a central nervous system reflex response ading to vagal withdrawal and sympathetic nervous mulation. It has been noted that if the exercising limb occluded during static stress, the blood pressure will t return to control levels until the tourniquet is leased[9] and potassium ion has been implicated as the ochemical stimulus for this reaction.[10] The reflex ncept has been further supported by observations in e denervated heart postcardiac transplant.[8] In this tting isometric hand grip fails to cause increases in art rate, cardiac output, or stroke volume, although ood pressure and total vascular resistance continue to crease. Reflex mediated alpha adrenergic peripheral soconstriction attempts to maintain blood pressure d flow to the exercising muscle group although creases in cardiac output cannot be established in the sence of increases in heart rate.

The hemodynamic effects of static exercise are far fferent than those associated with dynamic motion lated stress as shown in the Table. Dynamic muscle tivity leads to a marked increase in heart rate and stolic blood pressure with little change in mean blood essure as diastolic pressure tends to fall. These effects e secondary to a marked increase in cardiac output d stroke volume associated with profound peripheral sodilatation and decreased vascular resistance in the ercising muscle mass. In addition, the mechanical action of the exercising muscles tends to increase venous return to the heart. In this way, one may think of the responses to dynamic exercise in large part on the basis of the increase in ventricular filling or preload and the responses to isometric stress, as previously noted, are predominantly associated with change in ventricular wall stress or afterload.

Table
Hemodynamic Responses to Exercise

	Isometric	Dynamic
Heart rate	+	+++
Systolic blood pressure	+++	++
Diastolic blood pressure	+++	-/↓
Mean blood pressure	+++	-/↓
Cardiac output	++	+++
Stroke volume	-/+	+++
Systemic vascular pressure	-/+	↓

+ minimally increased
++ moderately increased
+++ markedly increased
↓ decreased

It is specifically these changes in afterload secondary to isometric stress that have led to its application in bedside cardiac diagnosis. Sustained isometric hand grip has been used to accentuate the regurgitant murmurs of aortic or mitral insufficiency.[11]

If one performs sustained isometric exercise, progressive increases in heart rate and blood pressure to hypertensive levels will be unassociated with the tachycardia and dyspnea a patient frequently recognizes as major signs to cease exertion. His attention may be focused on the local discomfort of the exercising musculature. As such, it has been suggested that severe unrecognized hemodynamic stress may be placed on patients with cardiac disease performing sustained static stress.[12] It has been clearly demonstrated that static exercise can elicit angiographic signs of left ventricular dysfunction in a patient with coronary artery disease even in the absence of the development of angina pectoris.[13] In view of these observations, does isometric stress represent a hazard to the cardiac patient?

To answer this question one must understand the components of the myocardial oxygen supply/demand relationship. The degree of myocardial oxygen consumption is dependent upon a combination of factors including heart rate, contractile state, degree of ventricular filling (preload) and ventricular wall stress (afterload). Clinically, myocardial oxygen consumption has most readily been correlated with the determination of the heart rate x systolic blood pressure product. Myocardial oxygen supply is dependent upon the cardiac output and on any factors that might impede coronary blood flow such as fixed atherosclerotic obstruction or coronary vasospasm. Patients with atherosclerotic heart disease will develop angina or ischemia in response to stress fairly reproducibly when a threshold level of heart rate/blood pressure product is attained or surpassed.[14] As previously noted, patients with coronary disease may be unable to increase cardiac output during isometric stress while peripheral vascular resistance and blood pressure rise.

Myocardial oxygen consumption under these circumstances may significantly increase while little discerned physical effort has been expended. In addition, ventricular end diastolic pressure may increase indicating diastolic ventricular noncompliance or subclinical congestive heart failure.[5]

Haissly et al.[15] examined a group of patients all of whom experienced angina and significant electrocardiographic ST depression in response to standardly performed dynamic bicycle exercise testing. When these patients were subjected to varying intensities of isometric hand grip stress, ST depression occurred significantly less frequently and anginal pain was only rarely experienced even in the presence of blood pressure responses far in excess of those elicited by bicycle ergometry. In addition, peak maximum observed heart rate/blood pressure product during isometric exertion was comparable to or higher than previously established ischemic threshold levels at the time of angina-limited maximum dynamic exercise. Isometric exercise was well tolerated and no significant ventricular ectopy was noted during these maneuvers. These observations suggested that isometric stress testing was ineffective as a screening procedure for ischemic heart disease. If patients were capable of performing static stress to heart rate/blood pressure product levels equal to or in excess of their dynamic exercise anginal thresholds, either the heart rate/blood pressure measurement did not reflect myocardial oxygen consumption during isometric stress, or myocardial oxygen supply must in some way have been enhanced to allow higher levels to be obtained without the development of clinically recognizable signs of ischemia.

DeBusk et al.[16] compared responses to isolated isometric and dynamic exercises and to the combination of simultaneous isometric and dynamic stress in patients with angina. Ischemia was not noted during the isolated static maneuvers and angina was more frequently provoked by maximal dynamic stress as opposed to combined isometric and dynamic provocation. The heart rate/blood pressure product elicited during nonangina provoking combined isometric-dynamic stress was noted to exceed that observed in response to angina provoking isolated dynamic exercise. Elevated thresholds for the development of clinically recognized ischemia during combined isometric-dynamic intervention again suggested the possibility for favorable alteration of the myocardial oxygen supply/demand relationship. It was postulated that the markedly elevated diastolic blood pressures induced by the addition of isometrics to dynamic exercise mi
increase coronary perfusion, the majority of wh
occurs during the diastolic period of the cardiac cy
Whether this postulate is correct, one may conclu
from these observations that in patients with
congestive heart failure isometric stress or
combination of isometric and dynamic exercise are
tolerated and do not represent undue hazard.
possibility exists that the addition of isometrics
dynamic stress might in fact be beneficial in terms
enhancement of the heart rate/blood pressure angi
threshold level.

Since the majority of daily activities involve
combination of carrying an object while walking,
question arises whether an individual with athe
sclerotic heart disease should undergo combin
isometric-dynamic stress testing to determine tolera
limits in preparation for vocational counseling.
recent study of Hung et al.[17] has suggested that he
rate/blood pressure responses at peak effort are simi
for isolated dynamic or isometric-dynamic exerci
They postulated that as stress is increased to peak li
the vasodilatory influences of the dynamic compon
of the exercise overcome the vasoconstrictive respon
to the isometric component of the activity. Th
concluded that patients failing to develop ische
abnormalities during peak dynamic stress testing wo
be expected to equally tolerate combined isometr
dynamic maneuvers. As such, the performance o
symptom limited dynamic stress test was all that
required prior to activity recommendations for patie
proposed to undertake combined isometric-dyna
activity.

The observations reviewed would suggest seve
guidelines for the practicing physician. It would app
that in the vast majority of patients with atheroscler
heart disease, isometric stress is quite well tolerated a
infrequently associated with the development of angi
or arrhythmia. Static exercise is seldom of a severity
duration significant enough to reach ische
thresholds. The major exception to this generalizati
would be the patient with underlying left ventricu
dysfunction in whom isometric stress may precipit
marked increase in ventricular filling pressure a
detriment of cardiac output associated with sympto
of congestive heart failure. Routine isometric str
testing would appear to be of limited value in assessi
the state of coronary arterial or functional reserve.
cannot be used as a screening maneuver for corona
artery disease. In addition, an individual's capability
perform isometric or combined isometric-dyna
activity can be predicted by performance of a standa
symptom limited dynamic exercise test by treadmill
bicycle ergometry technique. The most important fact
in predicting a patient's response to isometric str
would appear to be the state of his left ventricul
compensation with the major potential danger for t
type of exercise limited to those patients with congesti
heart failure.

should be emphasized that although isometric rcise training may enhance muscle strength there is evidence to support the view of this activity proving cardiovascular reserve or fitness. There is e to suggest that isometrics be recommended as a t of a routine cardiac rehabilitation program. This s not mean, however, that in patients with npensated left ventricular functional states these vities as they might occur in daily life, need essarily be avoided or discouraged. The previously lely held view that isometrics were generally ntraindicated in patients with heart disease would ear to have been overemphasized and unsupported.

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Needle Aspiration Biopsy of Lung Lesions at an Arizona Veterans Hospital

John J. Seidenfeld, M.D.
Michael A. Warlick, M.D.
Frederick R. Ahmann, M.D.
Karen K. Steinbronn, M.D.

Abstract

In patients with peripheral lung masses or in those with a negative bronchoscopic evaluation, percutaneous transthoracic needle aspiration biopsy (PTNAB) is often performed. Studies suggest that both sensitivity and specificity are high, and the procedure frequently results in useful diagnostic information. We reviewed the results of 48 biopsies over a 31 month period to study the usefulness of PTNAB when procedures were performed by supervised trainees and interpreted by a certified cytotechnologist and pathologists. When conditional diagnoses were included the sensitivity of cytologic diagnoses was 50% and that of histologic diagnoses was 56%. The predictive value of a negative result was 47% for cytology and 58% for histology. When cytology and histology were combined, sensitivity was 76% and predictive value of a negative result was 67%. These values were lower when conditional diagnoses were excluded. Specificity and predictive value of a positive result were 100%. The procedure was not useful in defining cell type. Complications included 22% pneumothoraces not requiring chest tubes, 12% requiring chest tubes, and 4% local hemorrhage. We conclude that PTNAB should be used to obtain a diagnosis of malignancy only if cell type is not critical or if a negative result would influence the decision to perform thoracotomy. The results of this procedure may depend on the experience of the personnel obtaining the specimen and the skill of the cytology and histology interpreter; however, our results are similar to literature values and may represent those in other institutions where PTNAB is done infrequently and by trainees.

Key Words: Lung Needle Aspiration Biopsy, Malignancy, Lung Cancer.

Introduction

In 1883, percutaneous transthoracic needle biopsy was performed by Leyden to obtain microorganisms from a patient with pneumonia.[1] In 1886, Menetrier used this technique to diagnose bronchogenic carcinoma.[2] The procedure has gained increasing acceptance in this

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From: University of Arizona Health Sciences Center and Tucson Veterans Administration Medical Center, Tucson, Arizona. Reprint requests to Dr. John Seidenfeld, Pulmonary Disease Section, (111A), Tucson Veterans Administration Medical Center, Tucson, Arizona 85723.

century, with the advent of improved cytologic techniques and image intensified fluoroscopy. In the 1960's, Nordenstrom and Dahlgren used thin walled needles (18-20 gauge) to perform percutaneous transthoracic needle aspiration biopsies (PTNAB).[3,4] Variations of aspiration needles (including screw needles and ultra thin needles), have largely replaced cutting needles.[5,6] A recent paper has suggested that percutaneous transthoracic needle aspiration biopsy be used in community teaching hospitals.[7] We have reviewed our experience over a 31 month period to assess the value of the procedure when it is performed by supervised trainees and interpreted by a certified cytotechnologist and pathologists.

Methods

The records of 43 patients were reviewed retrospectively. A total of 48 procedures had been performed. Patients selected had had needle biopsy between January 1980 and August 1982. The procedures were performed in all cases after fiberoptic bronchoscopy and biopsy failed to reveal the diagnosis. The procedures were performed by a resident physician in the radiology suite under fluoroscopy and supervised by a radiology staff physician. Local anesthesia was given and most procedures included four chest punctures and aspirations with three to four inch needles varying in gauge from No. 18 to No. 22. The needles were inserted and position checked under fluoroscopy. Material was aspirated and placed directly into either 50% ethanol for cytology or 10% formalin for histologic examination. Cytologic specimens were processed by cytocentrifuge, and stained with Papanicolaou stain. Histologic specimens were paraffin embedded and stained with hematoxylin and eosin. Conditional diagnoses included "consistent with (C/W), possible, suspicious for, and probable." Material was taken for culture when infection was suspected. Patients had repeat chest x-ray from one to four hours after the procedure and were followed with vital sign measurements for four to six hours after the procedure. Most patients had follow-up chest roentgenograms available for one to two yea after the procedure.

Table 1
Percutaneous Needle Aspiration Biopsy Results

	Cytology n=48	Histology* n=40
Nondiagnostic	53%	33%
Benign	2%	8%
Malignant	18%	43%
"Consistent with" malignancy	27%	18%

*in 8/48 procedures no specimen was obtained for histolo exam.

Results

Forty-three patients and a total of 48 procedures we evaluated. The retrospective period covered was months ending August 1982. The mean patient age w 66 ± 10 years, and all patients evaluated were males a smokers.

Two-thirds of the patients had lesions less than equal to four centimeters in size measured fro standard radiographs and one-third had lesions great than four centimeters. Lesion size less than or great than 4 cm. did not correlate with malignant diagnos Size less than 4 cm. was not associated with a higher ra of false negative results.

Twenty-seven of 43 patients or sixty-three percent ha lesions located in either the left or right upper lob Twenty-eight percent were located in the lower lob and seven percent were located in the left hilum. Or lesion was present in the right middle lobe, however r lesions were seen in the lingula or right hilum. Eight eight percent of the patients had only one percutaneo needle aspiration biopsy and twelve percent had tw procedures. No patients had more than two procedure

Needle cytology results yielded 53% nondiagnost 18% malignant, 2% diagnostic benign, and 27

Table 2
Comparison of Cell Type by Procedure
Surgery or Autopsy Diagnosis*

Cytology and Histology	Squamous Cell	Adenocarcinoma	Malignant non-small cell	Benign	Totals
Adenocarcinoma		2			2
Squamous Cell		1			1
Small Cell		1			1
Malignant	1	2			3
Malignant non-small cell		3	1		4
"C/W" Malignancy	3	1			4
Benign				7	7
Negative	7	6	1		14
Totals	11	16	2	7	36

*results of cytologic and histologic independent examinations are included for eighteen patients who later underwent surger autopsy.

nsistent with" malignancy. Needle histology results ealed 33% nondiagnostic, 43% malignant, 18% nsistent with" malignancy, and 8% diagnostic benign ble 1). Surgical specimens were obtained in sixteen ients and of these the ratio of malignant to benign s three to one. Cell types diagnosed on PTNAB are npared to cell types diagnosed on surgical or autopsy ecimens in Table 2. Those patients with negative ults on PTNAB who went to surgery when the clinical picion of malignancy was high all had malignancy. nign diagnoses were also not accepted; however, se patients were found to have benign lesions at gery. All patients with benign diagnoses had culture cytologic evidence of infection. Malignant cell types re frequently not specified in the PTNAB pathology erpretation.

able 3 shows the sensitivity and predictive value of a gative result for PTNAB cytology and histology. mbining the cytology and histology results gave the ghest sensitivity and predictive value of a negative sult compared to either alone; however, the exclusion conditional diagnoses resulted in lower values. No se positive results were found in patients who later d surgery or autopsy despite the high percentage of nditional diagnoses.

Twenty-four patients had no definitive procedure yond the needle aspiration biopsy. Based on the ocedure results seventeen of the twenty-four were esumed to have a malignancy and one was presumed have a small cell carcinoma. Patient management was sed on the diagnosis by cytology or histology in these tients. In none of the cases did the CXR stabilize or gress spontaneously. Some of these patients received adiation and/or chemotherapy. Twelve underwent diation therapy, nine had chemotherapy, and four ere palliated. These four progressed on chest diograph. One patient was lost to follow-up.

Six patients had negative cytologic and histologic amination and were followed radiographically ithout treatment. Resolution was noted in these tients. One patient had a diagnosis of malignancy on NAB but his lesion resolved radiographically.

Twenty-two percent of these patients had pneu- othoraces not requiring chest tube placement. Twelve ercent had a pneumothorax which required chest tube acement and four percent had a local hemorrhage oted in the area of the biopsy on chest roentgenogram. xty-two percent of the patients had no complications om the procedure.

iscussion

PTNAB results were useful in making therapy ecisions. Sixteen patients were operated on after the rocedure; a negative biopsy did not deter appropriate ction when malignancy was strongly suspected. Benign iagnoses were borne out as predicted. PTNAB results ere used as the sole basis for therapy in 14 patients and sed to justify clinical follow-up in five patients who roved to have benign disease. The risk of complication as acceptable.

Table 3
Analysis of PCNAB Results at TVAMC*

Test	Sensitivity	Predictive Value of Negative Result
(1) Needle cytology including C/W diagnosis	50%+	47%
(2) Needle cytology excluding C/W diagnosis	33%	47%
(3) Needle histology including C/W diagnosis	56%	58%
(4) Needle histology excluding C/W diagnosis	46%	42%
(5) Combined histology and cytology including C/W diagnosis	76%	67%
(6) Combined histology and cytology excluding C/W diagnosis	64%	67%

*Specificity and predictive value of a positive were 100% in all cases; there were no false positives found.

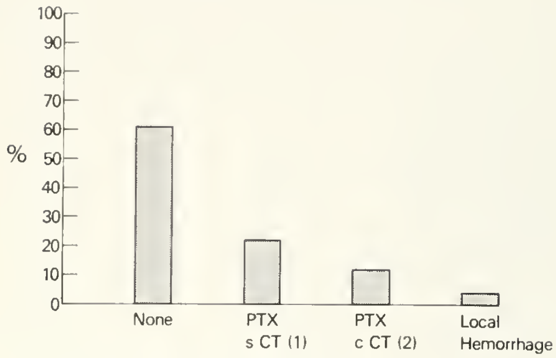
The choice of diagnostic procedures in evaluating thoracic lesions has been debated in the past. Hayata et al. evaluated 367 cases of pulmonary carcinoma with PTNAB, rigid bronchoscopy, sputum cytology, fiberoptic bronchoscopy and brushing under fluoroscopy; in malignancies presenting as peripheral lesions, PTNAB resulted in the best sensitivity (86.7%) as compared to fiberoptic bronchoscopy (61.0%) and sputum cytology (42.3%).[8] Mark, Marglin, and Castellino found similar results in 32 patients presenting with peripheral malignancies; the sensitivities of PTNAB and fiberoptic bronchoscopy were 78% and 53% respectively.[9] Bergeskov and Francis found a 72% sensitivity by PTNAB and 41% sensitivity by fiberoptic bronchoscopy in 29 patients with peripheral malignancy.[10] Short of thoracotomy, the literature suggests PTNAB is more sensitive than other modalities in the diagnosis of malignant peripheral lesions.[8-10] It is equally sensitive in diagnosing small peripheral malignancies (less than 2.0 cm) and larger peripheral malignancies.[6,8] However, if the malignancy is small (less than 2.0 cm) and is centrally located, the sensitivity of PTNAB decreases.[6]

Fiberoptic bronchoscopy may be more sensitive than PTNAB when the lesion being evaluated is central and endobronchial.[8] If both procedures are performed, the sensitivity improves.[9] Sputum cytologies are less sensitive than either of the above procedures in the diagnosis of malignancy.[8,11]

The overall sensitivity [true positive/(true positive + false negative)] of PTNAB in diagnosing malignancy has ranged from 74% to 97%.[3-10,12-18] Several points must be noted in assessing the sensitivity figure. First, in a number of studies multiple separate biopsy procedures

Figure 1

Complications of Needle Aspiration Biopsy



1= pneumothorax not requiring chest tube

2= pneumothorax requiring chest tube

were performed (up to 25% of the population studied) to achieve the stated sensitivity.[4,13,14] Second, in some publications cytologies termed "suspicious" were included in the true positive category if malignancy was later confirmed.[7,13] Finally, in a number of reports the knowledge of a previous malignancy in a patient may have been made available to the pathologist prior to reading the biopsy. All of these points tend to enhance the apparent sensitivity of this procedure in diagnosing malignancy. Compiled statistics from several centers place the sensitivity of PTNAB at 83%.[7]

The specificity [true negative/(true negative + false positive)] of PTNAB is extremely high, as there are few false positives.[5,6,12-18] For similar reasons, the predictive value of a positive biopsy [true positive/(true positive + false positive)] is extremely high.[7] In our study we have had no false positives including conditional diagnoses, giving us 100% specificity and predictive value of a positive diagnosis (one patient had malignancy diagnosed on PTNAB with subsequent radiographic clearing but no definite tissue was available on this patient).

The predictive value of a negative biopsy [true negative/(true negative + false negative)] is of critical importance since the crux of the matter in approaching chest lesions for most clinicians is to exclude malignancy. Compiled statistics as presented by a recent publication, reveal the predictive value of a negative biopsy to be only 50%.[7] This figure is similar to our findings and seems inadequate to rule out malignancy.

The predictive value of a negative biopsy is altered by changes in the probability of malignancy and changes in the sensitivity of PTNAB. As the probability of malignancy increases, the predictive value of a negative biopsy decreases. If the probability of malignancy is high (80%), a negative biopsy for malignancy is almost as likely or more likely to represent a malignant than a benign result. In contrast, when the probability of malignancy is small, the predictive value of a negative biopsy appears to be great. When the sensitivity of PTNAB is low (60% an increasing probability of malgnancy marked decreases the predictive value of a negative biops However, when the sensitivity is high (97%), there is le change in the predictive value of a negative biopsy wi an increasing probability of malignancy.[6,17]

Arguments for performing PTNAB, when th predictive value of a negative biopsy is low are th 1) specific benign diagnoses can be made and that 2) malignancy is present, cell type can be established. Bot might prevent further invasive procedures for diagnosi

Specific benign diagnoses which adequately rule o carcinoma are difficult to establish on the basis of limite pathologic material. Diagnoses such as granulom fibrosis, and inflammatory changes do not adequate rule out malignancy. Specific benign diagnosis can b established in less than 20% of the true negativ group.[7,12,14-16]

Cell typing by PTNAB is based on limited patholog material. Dahlgren found the histologic cell type t agree with PTNAB cytologic cell typing in 77% of 1 patients.[4] Hayata et al. were able to obtain corre histologic diagnosis in 63.9% of malignancies.[6] Todd al. have obtained approximately 70% accuracy in the cell typing of squamous cell carcinoma and ad nocarcinoma. The ability to document oat ce carcinoma by cytologic methods has been suggested t be lower than squamous cell carcinoma and ad nocarcinoma.[4,17,18] Taft et al. found the large discrepancy between cytologic and histologic diagnos to occur in the adenocarcinoma category.[19] Problems i identifying cell types on PTNAB are related to th procedure itself in which only a limited sample obtained and to the variations in morphology an differentiation which are frequently exhibited b tumors. Overall, an incorrect cell type will be obtaine in one of four malignancies on the basis of cytologic ce typing and a diagnosis of malignancy without specif cell type is usually given.

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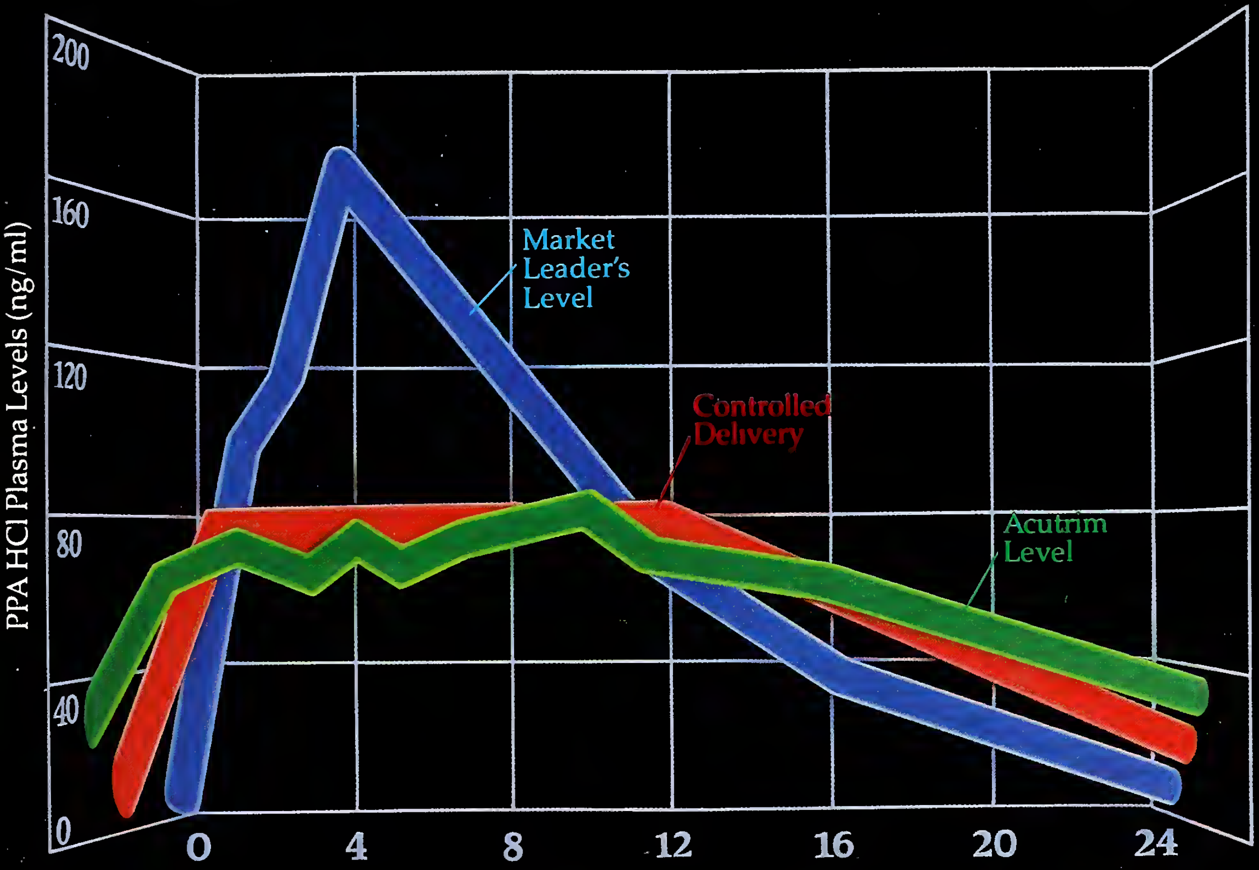

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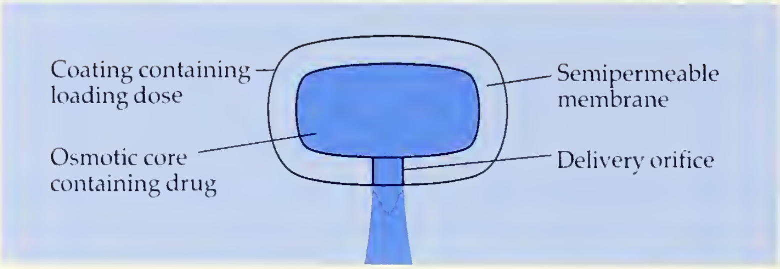

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ntraoperative Monitoring of Brain Function With Evoked Potentials During Neurosurgical Procedures

Richard P. Greenberg, M.D., Ph.D.
Alan S. Fleischer, M.D.

Abstract

In spite of more precise identification of CNS diseases offered by the CT scan and increased precision and delicacy of surgical technique possible with the aid of the operating microscope, it is still difficult to assess the biological effect of each surgical maneuver while patients are anesthetized and the procedure under way. Brain electrical activity in the form of computerized evoked potentials can be used intraoperatively in a continuous manner to monitor specific areas of the brain during complex neurosurgical procedures. The addition of this noninvasive electrophysiological tool to advanced microsurgical technique may significantly improve patient outcome. We review our experience and that of others and suggest indications for the use of evoked potentials during brain surgery.

Key Words: Evoked Potentials, Posterior Fossa Surgery, Aneurysms, Tumors, Tic Douloureaux, Brain Stem Evoked Potentials.

Introduction

Perhaps the two most important advances in the surgical treatment of diseases of the central nervous system (CNS) in the last 20 to 30 years have been the use of the operating microscope and the availability of computerized axial tomography (CT) for the diagnosis and localization of intracranial pathology. In spite of more precise identification of CNS diseases offered by the CT scan and the increased precision and delicacy of surgical technique possible with the aid of the operating microscope it is still difficult to assess the biological effect of each surgical maneuver while the patient is anesthetized and the procedure under way. For example, to what level can systemic blood pressure be lowered while dissecting and clipping an intracranial aneurysm without causing irreversible ischemic brain damage? How much manipulation may be done to a vital structure such as the brain stem when removing an extra-axial tumor?

The neurological examination is the best method of assessing brain function. However, during surgery this approach to CNS functional evaluation is not possible. Brain electrical activity, like the neurological examination, depends upon neuronal function for its realization and is a valuable means of examining the

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From: University of Arizona Health Sciences Center, Tucson, Arizona. Reprint requests to Richard P. Greenberg, M.D., Ph.D., Department of Surgery, Section of Neurosurgery, University of Arizona Health Sciences Center, Tucson, Arizona 85724.

Table

Posterior Fossa Surgery	
Acoustic Neuroma	4
Astrocytoma	3
Trigeminal Nerve Decompression	3
Medulloblastoma	2
	12
Supratentorial Surgery	
Insertion of Depth Electrodes for Pain Relief	9
Aneurysm	5
Transsphenoidal Pituitary Adenomectomy	3
Cranial Reconstruction for Crouzon's Diagnosis	1
Parasagittal Meningioma	1
	19
Total	31

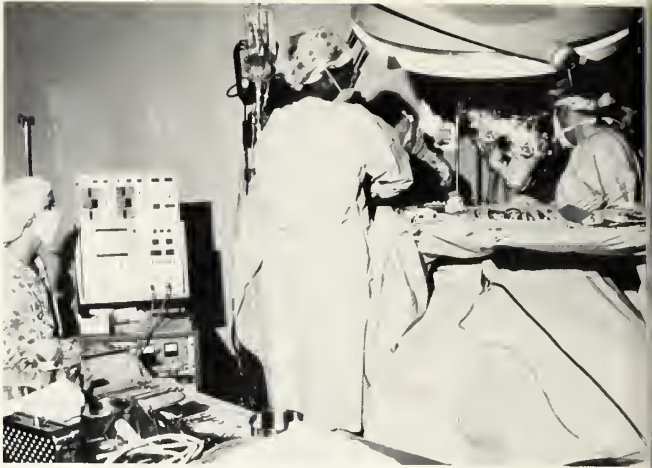

Figure 1
The operating microscope and two modalities of evok potentials are being utilized during a posterior fos exploration at the University of Arizona Hospital. Bo somatosensory and auditory evoked potentials are helpful monitor brain stem function.

brain intraoperatively. Brain electrical activity in the form of computerized evoked potentials has been utilized intraoperatively to monitor specific areas of the brain during neurosurgical procedures. The addition of intraoperative monitoring of brain function to microsurgical techniques may significantly improve the outcome of patients with complex neurosurgical disease.

Discussed in this communication are the indications for evoked potential monitoring and a review of our experience and that of others who have utilized this computerized electrophysiological technique to examine the brain intraoperatively.

Methods

Patients

There were 31 patients monitored intraoperatively with multimodality evoked potentials (somatosensory, auditory or visual evoked potentials) in our series[1] (Table). In each case the evoked potential modality was selected that could best monitor the area of CNS most likely to be at risk. Patients undergoing posterior fossa surgery were monitored with either auditory or somatosensory brain stem evoked potentials, and in some cases both of these were utilized[1-6] (Figure 1). Patients in whom depth electrodes were placed in order to stimulate the periventicular gray matter to relieve chronic intractable pain and somatosensory brain stem potentials monitored, and somatosensory potentials were also recorded via the depth electrodes. During supratentorial aneurysm or tumor surgery, the modality chosen depended on the hemisphere and lobe around which we were working. For example, the patient with the parasaggital meningioma was monitored with somatosensory cortical evoked potentials stimulating a lower extremity peripheral nerve. Visual evoked potentials were utilized intraoperatively to assess the optic nerves and chiasm during pituitary surgery and when moving the orbits for cranical reconstruction in a patient with Crouzon's Disease.

Multimodality Evoked Potentials

Specific methods for obtaining multimodal evoked potentials have been previously described in detail. The somatosensory evoked potentials (SEP) obtain from upper or lower extremity peripheral ner stimulation provide information about the brain ste diencephalon and cortex (hand or foot area). T earliest waves of SEP (0 to 20 msec) arise from t peripheral nerves, spinal cord and brain stem. T primary cortical response occurs at approximately msec. Thereafter SEP components represent cortic function of both frontal and parietal lobes.[4,5]

The auditory evoked potentials (AEP) obtained fro stimulating the ear with short latency clicks provic functional information about the brain stem from t pons rostrally in the first 8 msec after stimulatio Following the elaboration of brain stem potentials A waves reflect auditory cortex function presumably in t temporal lobe area.[4,6]

The majority of potentials recorded in response to flash of light to the eyes or visual evoked potentials (VE can be attributed to activity occurring in the hem spheres mostly in the occipital lobe.[4]

Results

Of the 12 patients in this series undergoing posteri fossa surgery for tumor removal or decompression the trigeminal nerve, eight had both their auditory an somatosensory evoked potentials (brain stem com ponents) monitored. The four patients in whom on somatosensory brain stem potentials were monitore had acoustic neuromas with minimal or no eighth nerv function.

Typical evoked potentials recorded during posteri fossa surgery are depicted in Figures 2 and 3. This patie had tic douloureaux for 30 years. Medical manageme and two prior radio frequency Gasserian gan lionectomes gave only temporary pain relief. Posteri fossa exploration for decompression of the trigemin nerve was undertaken at the University of Arizon Hospital utilizing both auditory and somatosenso

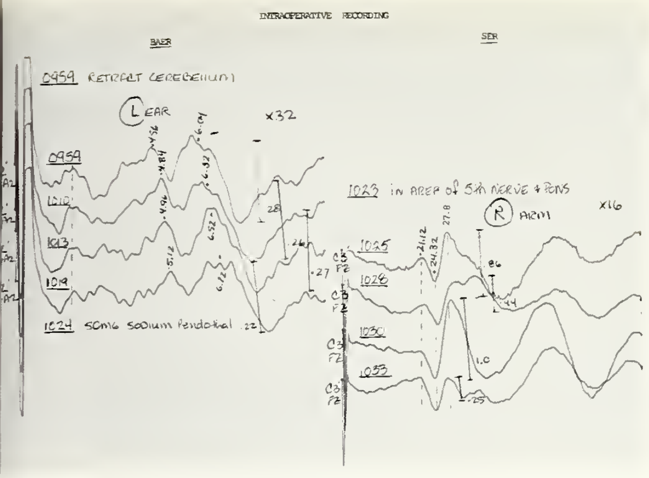

Figure 2
traoperative recording during posterior fossa surgery of the uditory brain stem evoked response (left) and the matosensory evoked response (right). The auditory brain em evoked response is more sensitive to manipulations that o not cause significant permanent dysfunction such as cool line irrigation, exposure to air and lowered body mperature. The latency of the wave peaks becomes delayed minor manipulations are done around the brain stem (9:59 m.—10:19 a.m.). The somatosensory evoked potential mains unaltered by these manipulations and generally anges only when a major insult occurs.

voked potentials to monitor the brain stem (Figure 2). It as possible to use both the microscope and the evoked otential equipment during the case without difficulty igure 1). A continuous sampling of brain stem activity an be monitored on an oscilloscope and the waveform bserved for significant changes that may indicate a ompromise of brain stem function (Figure 3).

The auditory brain stem response is generally more ensitive to such factors as cold saline irrigation, xposure to air and lowered body temperature. This can e seen in the evoked potential recordings by observing e slight increase in latency of auditory brain stem wave tencies over a 20 minute period after exposure of the igeminal nerve (Figure 2). SEP activity, on the other and, is more robust and usually does not show an crease in wave latency unless major insults such as chemia develop (Figures 2 and 3).

Of 19 patients whose surgery was supratentorial 14 ere monitored with somatosensory evoked potential, ur with visual evoked potential and one with auditory voked potential. One of the patients with a middle erebral artery aneurysm had his mean blood pressure owered stepwise from 110 mm Hg to 60 mm Hg. The eight of the primary cortical wave response was 50% of aseline at a mean pressure of 60 mm Hg (Figure 4). We lected to maintain the pressure and not further reduce during the aneurysm dissection and clipping in order avoid irreversible ischemia and a potentially isastrous outcome.

iscussion

Evoked potentials may offer additional insights in the perative management of patients with CNS pathology because they can be used intraoperatively to monitor the integrity of specific neural pathways and the cortex.[1-6] Continuous intraoperative monitoring of visual function, for example, has been accomplished during parasellar surgery by our group and others.[1,7,8] Feinsod

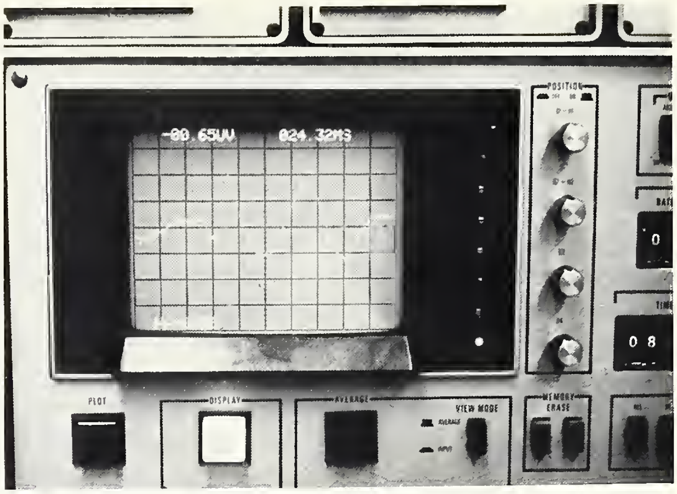

Figure 3
Close-up of intraoperative somatosensory evoked potential as seen on computer oscilloscope screen in Figure 1.

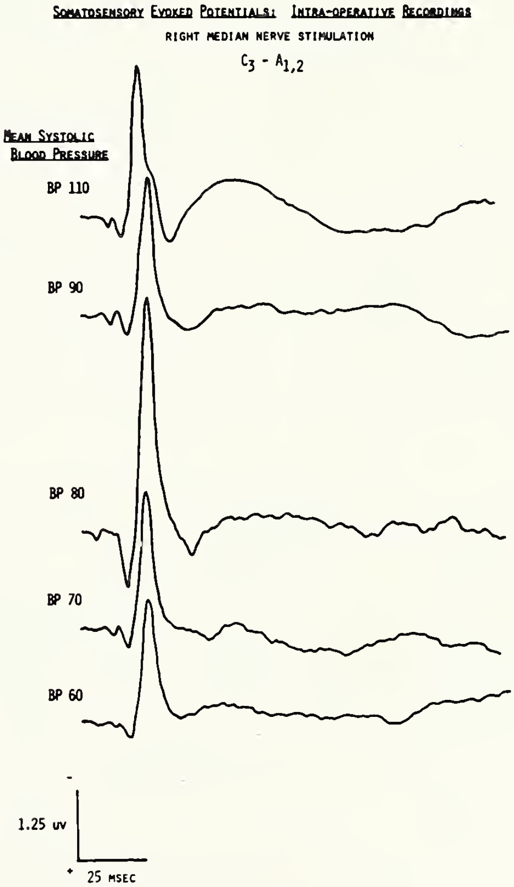

Figure 4
The amplitude of the primary cortical component of this somatosensory evoked potential decreases by 50% of baseline as the mean blood pressure is lowered from 110 to 60 mm Hg during aneurysm surgery.

et al. reported that during the surgical removal of a pituitary adenoma, prolongation of VEP latency and deterioration of wave patterns could be noted when the optic nerves were manipulated.[7] Furthermore, recovery of the VEP waveform recorded following stimulation of the impaired eye began as early as ten minutes after surgical decompression of the optic nerve. The effect of manipulation of the optic nerves and chiasm and occlusion of the perichiasmal vessels was evaluated continuously during surgery by Wilson et al.[8] They reported that changes of the baseline VEP caused by manipulation were reversible and were probably secondary to transient ischemia.

Somatosensory evoked potential components, both cortical and brain stem, have been used to monitor intracranial tumor removal by our group and others.[1] Interestingly, during acoustic tumor surgery in the posterior fossa the somatosensory brain stem evoked potential can be used to monitor stem function when the auditory brain stem evoked response cannot be recorded because of eighth nerve compromise.

Perhaps the most interesting and as yet not fully explored intraoperative use of evoked potentials is the monitoring of brain function during neurosurgical vascular procedures. The level to which systemic blood pressure can be safely covered may be monitored with cortical evoked potentials (Figure 4).

We believe that the next major advance in neurosurgical operative technique may be obtained with the widespread use of intraoperative evoked potential monitoring. In this way the brain can be "examined" frequently during surgical procedures so potential risks, perhaps not readily appreciated by the surgical team, can be avoided.

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Divorce in Medical Practice

Helping Patients through the Process

Timothy A. Musty, M.S.S.W., ACSW

Abstract

The physician from many medical specialties wi encounter patients, both adults and children, wh present physical and emotional symptoms concurrer with the process of divorce. Divorce is a comple lengthy process which has a strong impact on the healt and well being of all family members. As a truste member of the family's social network, the physicia may be consulted regarding a myriad of divorc problems. By having knowledge of the stages of th divorce process, the physician will be able to guid patients through some of the troublesome areas. second area in which the physician can be helpful is i guiding families to appropriate resources in th community for additional help in the process. Speci concern should be addressed to the problems childre experience in divorce, and the physician can be ver helpful in this area.

Key Word: Divorce.

Divorce in the United States has become a increasingly prevalent phenomenon. According to th National Center for Health Statistics there were 1,183,00 divorces in the twelve months ending with Novembe 1982, and it is expected that the number of divorces wi exceed another million this year. For every tw marriages there is one divorce.[1] In Arizona, there wer 24,640 divorces completed in 1981. In 1982 the numbe of completed divorces dropped slightly to 24,253.[2] Man men and women dealing with divorce are alone. Th extended family may be nonexistent or unavailable t give emotional support or financial aid. Consequently many divorcing couples are seeking help from suc institutions as churches, social services, schools, and th medical establishment.

It would be natural to expect that most families woul consult a psychiatrist or other mental health professiona during a divorce. This is not necessarily the case. Fo example, in Pima County, 53% of the people who file for divorce in 1982 hadn't sought mental health hel prior to filing.[3] Who, then, do divorcing people consul prior to filing for divorce? Unfortunately, there are n statistics available on who people consult. Many peopl may consult relatives, clergymen, friends, or attorneys. I

From: Department of Psychiatry, University of Arizona Healt Sciences Center, Tucson, Arizona. Reprint request to Timothy A Musty, M.S.S.W., ACSW, Psychiatric Social Worker and Lecture University of Arizona Health Sciences Center, Department c Psychiatry, 1501 North Campbell Avenue, Tucson, Arizona 85724.

likely that a large number of people may contact their
mily physician. This could include a range of medical
ecialists such as family practice, pediatrics, internal
edicine, obstetrics and gynecology, etc. In her article
"Divorce in Clinical Practice," Curran points out that
ivorce is a crisis in parents' and childrens' lives, yet
e in which the physician has had little formal training
evaluate the child's reaction to divorce and to offer
idance to the parents."[4] She further states, "the family
ysician is viewed by most children and families as an
portant and significant person in the community and
e who has a very personal and unique knowledge of
ildren and families in his/her practice."[4] Con-
quently, it is important for the physician to have an
derstanding of how the divorce process affects
milies and children. By having this knowledge, the
ysician will be better prepared to deal with children
d families who present divorce related problems. A
cond area in which the physician can be helpful is in
iding families to appropriate resources in the
mmunity for additional assistance in the divorce
ocess.

The ways in which families and children present their
ncerns about divorce are numerous. A parent may call
bring up the subject during an office visit. Parents
d/or children may present physical complaints that
ve a strong relationship to the acute stress that they
e feeling about the impending breakup of the family.
n important first step in helping is to assess the stage of
e divorce process in which family members are
esenting their concerns.

isintegration of the Marital Relationship

The earliest stage, disillusionment, occurs when one
ouse becomes less trusting and attracted to the other.
t this stage, one spouse may fail to live up to the
ealized image of the other.[5] The physician could
commend marriage counseling at this point because
sillusionment can be reversed if the couple is able and
illing to talk about and work through their differences.
age two, erosion, involves a more serious wearing
vay of marital satisfaction. Repressed anger and hurt
ft over from the disillusionment period is expressed in
is stage.[5] Spouses may present themselves to the
ysician with anxiety, depression, impotence, ulcers,
igraines or other psychosomatic symptoms.
tramarital affairs are common during this stage. In
ite of the anger and destructiveness, the couple are
ery much involved with each other. Thus, a referral for
arriage counseling would still be worthwhile. Partners
ay be less willing to enter counseling at this point
ecause of the built up anger and resentment. The next
age, detachment, usually occurs about 1 to 1½ years
rior to the divorce. Detachment is characterized by
athy, anger and subtle anticipation of the divorce
king place. The detached person begins to dream of
is/her own future without the spouse. A subconscious
ecision to divorce has often been made.[5] Persons in this
age often benefit from individual counseling to help
rt out their ambivalent feelings. If feelings cannot be worked out at these earlier stages, physical separation is usually the next step.

Physical Separation

Physical separation is the most traumatic aspect of the divorce process in terms of the psychological toll it takes on spouses and children. The time immediately following the separation is one of tremendous vulnerability for all family members.[5,6] During this period, family members are subject to great emotional fluctuations. The potential for physical violence is high at this time. The children may see bizarre and frightening behavior in their parents.[6] Normally, the parents experience a diminished capacity to parent because of their own overwhelming emotions.[6] Acute economic stress may occur because of the need to support two households or because one parent abandons financial responsibility for the family. The family and its members may become isolated as the social network changes. Both parents and children may lose contact with significant relatives and friends. The adults struggle with the issue of telling friends and relatives about the impending divorce. The couple may have enjoyed respect among family and friends as having had a good marriage. The loss of this image can be a significant emotional blow to both individuals.[7] Because of this loss of self-esteem, the spouses may experience feelings of guilt, loss, depression, anger, or anxiety.[5,6] While the marriage may have been stressed prior to the physical separation stage, the level of stress beginning at the physical separation can be more intense as all the concern about divorce have to be faced. One study showed that after the final separation, nearly half of the respondents reported disturbances in work, sleep, and health status.[8] Both males and females may seek a medical evaluation at this time, and some may want some type of drug therapy to deal with their levels of anxiety or depression.[9] One of the concrete ways that a physician can also help the adults who present psychosomatic complaints is to acquaint them with some of the current knowledge about change. Patients could be acquainted with the Holmes and Rahe Social Readjustment Rating Scale which helps people understand their vulnerability during periods of transition and change.[10] An awareness of this vulnerability may be an important factor in helping a patient adjust to the dramatic changes.

The children are also acutely affected during the period immediately following the physical separation. They experience the separation as an emotional abandonment by their parents. The children may also become depressed and anxious, and experience psychosomatic symptoms.[6] Another critical issue is how the children are told about the divorce. Wallerstein and Kelly noted that less than ten percent of the children had any adult talk with them about the divorce.[6] Many adults avoid this issue because they do not know how to approach their children. Other adults may even present totally unrealistic stories to the children about why one parent has left the household. The physician should ask the parents how they have presented the divorce to the children. The response of the parents will often reveal a great deal about how they are handling the divorce and their relationship to the children. Ideally, each parent should tell the children directly about the divorce and where the parent will be living in a vocabulary that the children can understand. The parents should allow the children to express their feelings, and give the children assurance that they are loved and cared for. Parents need help in realizing that children may continue to question the divorce process long after the physical separation. One very concrete suggestion that a physician can give to a parent is to obtain some of the books on divorce and give them to older children.[11,12] In the case of younger children, appropriate stories can be read to the child.[13,14] The parent also needs to know that reading a book about divorce once will not satisfy the child's emotional needs. The child may need to have a book read to him or her hundreds of times.

In cases where the emotional response to the physical separation is extremely intense, the physician should advise the parent to receive counseling or therapy for themselves and/or the children.

Resources the Physician Can Use

As has been previously mentioned, when a physician learns of an impending divorce or that the physical separation process has taken place, he or she is in an ideal position to help advise families in a time of crisis. One of the most helpful resources that people often overlook is the Conciliation Court if the county has one. In smaller communities, there is often a court counselor who works with divorcing couples. Depending upon the local Conciliation Court, many types of services are offered. These include marriage counseling, divorce counseling, and child custody advocacy and mediation to help divorcing couples work through issues of child custody and visitation. Many communities have local divorce recovery support groups. These groups are usually run by professional and paraprofessional people who have been through a program of training in the area of the divorce process. In communities where these programs are well developed, groups are available for both children and adults. Information on these groups can usually be obtained through a community information and referral service or through crisis telephone programs.

In addition to the emotional trauma following physical separation, the members of the couple have to face issues of how they will obtain a legal divorce. Traditionally, people have sought attorneys to guide them through this process and have not considered other options. Physicians may unknowingly advise patients to seek out a lawyer in this process. Because of new developments in the area of divorce, the physician should be aware of alternative resources. In this way, people can be informed of their options. The traditional method of seeking a divorce is for each spouse to engage the services of a separate attorney. The attorneys then may guide the individual through all the things that need to be taken care of legally which include spous support, child support, child custody and visitation, ar property division. The emotional and legal issues ofte become sharply intertwined. Parents who have a hig degree of resentment and anger may wish to take o their feelings in the legal arena. Consequently, som divorces become very combative. Children usually g caught in the middle of this process, and they can suff more emotionally because of it. A growing alternative approaching divorce in the traditional manner is divorc mediation. Divorce mediation began about ten yea ago, and it has experienced rapid growth in the pa several years. Divorce mediation differs in that bot members of the couple go to a mediator to work on th major areas mentioned above. Divorce mediators ma help a couple work out an entire separation agreemen or they may help a couple only work on selected area Divorce mediators are usually mental health profe sionals or attorneys who have received specialize training in mediation. The physician might be able t find out about experienced mediators through h contacts with marriage and family counselors. Usuall the Conciliation Court or court counselor in community is aware of the activities of mediator Mediation is a cooperative process, and the couple tak more responsibility for working out their ow settlement. Consequently, the couple and the famil may benefit greatly from this more cooperativ approach. Mediation is often less costly, both in financial and emotional sense. Mediators are highl sensitive to the needs of children in a divorce, and hel the parents address these issues.

A third alternative for divorcing couples that shoul be mentioned is that of the no-fault divorce kit. Arizon currently has a No-fault Divorce law, and divorce kits ar readily available in bookstores and other outlets. Using divorce kit certainly takes a certain amount of sel confidence, ability to navigate through some of th technicalities in filing a divorce agreement, and som skill in typing. In a landmark study on the emergence o pro se divorce aides, it was concluded that the publi should not be denied access to lay divorce assistance i the form of do-it-yourself kits.[15] While kits may see appealing to couples because of the potential for reduced cost, the complexities of working throug spousal support, child support, child custody an visitation, and property division without some type o professional assistance could be troublesome. Kits ar an option, however, that the consumer should be awar of. Certainly the physician is not in a position t recommend which of these options a patient shoul choose. But informing patients of their options can be a extremely helpful thing.

Other resources that can be of importance durin stages following separation may include: private menta health professionals who specialize in working wit families of divorce; school social workers, who can ofte help the children with school adjustment problems clergymen and other religious groups that can be o pport; social service agencies of varying types that can lp with some of the emotional and pragmatic ncerns; single-parent support groups that can ovide help in building a new social network (for ample, Parents Without Partners); and CPAs or ancial planners that can provide assistance with mplex financial settlements. By now, it is clear that ing through the divorce process can be an extremely mplex procedure in which the patient may come into ntact with numerous professionals. By being aware of e support systems that the patient might use, the ysician is in an ideal position to help divorcing uples make better use of the various resources that are ailable.

her Divorce Issues

There are many issues involved in the process of legal vorce that won't be addressed in this paper. Some of ese issues include spousal support, child support, the rying custody arrangements, and the importance of e adequate visitation with both parents. While these ues are extremely important, they can be adequately alt with by lawyers, mediators, mental health profes- nals, clergymen, and court counselors. A physician ay get questions from their patients during this period out some of these issues. Many times, parents seek the inions of outside experts to bolster their own position relationship to divorce negotiations that may be king place with the spouse. The image that the patients ay portray of the other spouse may be somewhat storted. Consequently, it is important for the physician t to get into taking sides about the myraid of divorce ues. The physician can offer to be a supportive listener ring the stages of the divorce negotiations, which are ten very stressful. After the legal divorce is completed, rather lengthy reorganization phase begins.

e Reorganization Phase

During the period of reorganization, there are a mber of specific issues that adults may present to the ysician. A sense of grief is one of the most difficult ings that the patient will contend with. It is natural for a ouse to go through a mourning process. The ourning process may bring forth anger, irritability, loss patience, and increased rigidity.[5] During this period grieving, the person may be very depressed. ivorcing persons should allow themselves to grieve, d many people need professional help in working rough this process. For those that refuse professional elp, the physician may find himself in the position of a unselor. One of the ways that a physician can be lpful is to try and help patients define their feelings d their needs. Burchell, an obstetrician and necologist, found that loneliness was a common mplaint from divorced women.[16] When this feeling of neliness was analyzed, it had three specific com- onents. These were the need for love, the need for iendship or affection, and the need for sexual volvement. To help the patient deal with the neliness, Burchell found it helpful to break down how ne could accomplish their various needs in smaller manageable goals.[16] Many people expect themselves to recover from the divorce experience much faster than is realistic. Wallerstein and Kelly's study showed that it took the women 3½ years after the separation to recover and it took the men 2½ years after the separation to recover.[6] Consequently, the physician can advise patients to set goals that aren't too far reaching.

Another phase of the reorganization stage is termed a second adolescence. During this phase, the adult is going through an identity crisis in which they are questioning who they are, and what they should be doing. There may be experimentation with different kinds of interests, activities, and lifestyles. The individual begins to look at the former spouse more objectively, and is not as emotionally invested in the loss of the marriage.[5] There may be lots of sexual experimentation during this stage. Because this stage requires taking a lot of risks in trying out new things, the adult may present concerns about sexuality to the physician. The physician can be a supportive listener at this time, helping people examine some of their options.

Following the period of second adolescence, the adults enter a phase of hard work exploration. This process of hard work exploration can take as many as one or two years, depending on the circumstances. The adult will show a sense of vitality and will be able to pursue some of their self-chosen goals. People are more trusting and open at this stage, and are ready for relationship with other adults out of a sense of strength rather than weakness.[5] The person is more approachable and better able to receive compliments from others. The person has shifted from a more passive stance to an active one of trying to make things in their new life work. When this sense of relief is accomplished and a calmness about the new lifestyle has emerged, it is termed psychic divorce. Psychic divorce is necessary for a person to recover from the emotional trauma of divorce. There is an acceptance of divorce as a way of life. Being able to cope with both the painful and pleasant memories of being married is a part of the resolution that is achieved in psychic divorce. There is a new sense of freedom which enables adults to move forward and build their new life. During the entire time the adults are working through the reorganization stage, the children are struggling with their own problems and concerns.

Special Considerations Concerning Children

Children respond very strongly to the impact of divorce. Derdeyn points out that relatively few children who have to cope with the divorce of their parents will be seen by mental health professionals.[17] Other professionals, such as pediatricians, family practice physicians, and school personnel will more likely be the contacts. Consequently, the parents of children may very much need advice and counseling during the various stages of the divorce process which is specifically directed to ways of helping the children. Kappelman and Black point out that a physician should play an extremely active role as a counselor and child advocate in divorce. They list a number of issues that the physician can address regarding children.[18] The primary issue is that parents need to assure the children they are separating from each other but not from the children. The children need reassurance that they will have access to both their parents, even though one is leaving the home. Children need to be encouraged to express their fears and fantasies. Children often feel that something in their behavior caused the divorce, and they are overcome with feelings of guilt and anxiety. The pediatrician or family physician may need to work on two levels. They may need to work with the custodial parent, usually the mother, on issues of continued parenting, discipline, and allowing the children to express feelings. As Derdeyn points out, the custodial parent often finds it very difficult to be sympathetic and supportive because she frequently is in considerable emotional turmoil herself.[17] There often tends to be a blurring of generation boundaries between parent and child. The physician may need to discuss age appropriate goals for the child, so the child does not get caught in a bind of acting as a surrogate spouse or surrogate parent.[17]

The pediatrician or family physician may also need to meet with the father to explain the importance of his continuing role in parenting. He can advise the noncustodial parent about the importance of frequent visitation and setting up an environment in which the child feels at home while he is visiting.[18] It is important also to emphasize to the noncustodial parent the importance of working on routine tasks such as homework in the second home so that the child gets a greater sense of belonging. The noncustodial parent should not just engage in fun activities with the child, because this will create a weekend Santa Claus situation. If the father is not the custodial parent, the pediatrician or family physician still might encourage the father to come in on a regular basis to monitor how the children are doing with him. It is very likely that either parent might try to draw the pediatrician or family physician into their battles about property division, child support, etc. The physician must take a stand that he cannot take sides on these issues, and could refer the couple to a divorce mediator or an attorney.

Another issue that the pediatrician or family physician can advise the parents of staying tuned into is the child's school progress. The parents should try to take an equal interest in the child's accomplishments in the academic area.[18] If the child encounters problems in school, both parents should try and get an understanding of the problem so that the child can be helped. A physician may find the school social worker, school psychologist, or school counselor helpful in assisting parents during periods of disrupted school performance because of divorce issues.

The primary area that the pediatrician or family physician is involved in is the child's health. If a child encounters a serious illness during the divorce, the physician should encourage both parents to be involved as a support to the child. When a child is hospitalized, one study showed that divorced parents need mu more reassurance from hospital staff.[19] Parents m blame themselves, each other, or the divorce itself having contributed to or caused the child's accide illness or suffering. In cases where the divorce was angry one, parents may try to exclude each other fr the child's hospitalization. The parents may split st members into divided camps, and this ultimately can detrimental to the benefit of the child while he/she hospitalized.[19] It would be important for the pediatrici or family physician to help coordinate communicati of the divorced parents of hospitalized children.

The landmark study by Wallerstein and Kelly deli eated some of the varying effects of divorce on t various age groups.[6] The preschool child and school a child are most at risk for personality disturbances as result of the divorce. The vulnerability of these childr is related to their emerging sense of identity and the need for both parents as identifciaton figures. Scho age children, from six to eleven years, often becor depressed, and they can become involved in loyal conflicts. In some school age children, there a problems with school failure, daydreaming, and po peer relationships. The preadolescent and adolesce child appear initially to be most upset about the divorc In the long run, however, adolescents have a mo realistic view of the divorce and are able to gain distanc between themselves and parents. In some adolescent the divorce can lead to problems with loss of contr which is exhibited in sexual acting-out, drinking, an drug usage.

The physician himself should interview the childre when they are brought in for medical care. Th physician should be aware that the child may defen himself from the painfulness of the divorce by suc things as denial, bravado, regression, or withdrawal. Th child may need this defensive stance, because it may b the only way he/she can handle his/her emotion during the crisis.[4] If the physician encounters childre who are showing behavioral extremes that are c concern in the home environment and at schoo referral to a child psychiatrict or other mental healt professional might be indicated. Psychosomati complaints such as headaches, stomachaches, if they ar persistent, may also be an indication of the need fo psychiatric intervention.

Conclusion

Divorce is a very complex process which require many changes in the lives of adults and children. Th adults go through varying stages of adjustment to th divorce starting with disillusionment and progressin onward through the physical separation, mourning th loss of the marriage, and then moving forward to th establishment of a new lifestyle. Adults may presen many concerns to the physician during this period including psychosomatic complaints, depression, an anxiety. The physician can be a supportive counselor t adults during this period, and can be extremely helpfu in referring the patients to outside resources.

The pediatrician or family physician may encounter ny children who are adjusting poorly to the divorce d present psychosomatic complaints, behavioral oblems, or academic underachievement. The pediacian or family physician is in a unique position to act as hild advocate and to help the parents interpret the vorce more appropriately to the child. In addition, the diatrician or family physician can be extremely lpful in helping parents define their parental roles and ovide equal access to the children. The pediatrician ay also be called upon to act as an advocate for the ild during a period of hospitalization during the vorce.

Divorce is a phenomena in our society that appears to showing no signs of diminishing. Consequently, the ysician, as a trusted person by many families, will be lled upon to help families through this most difficult d painful process. With an understanding of the stages the divorce process, and how it affects both adults and ildren, the physician will be better equipped to guide s patients through difficult areas.

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Promoting Medical Careers in Underserved Areas:

The C.U.P. Program at the University of Arizona

Ronald E. Pust, M.D.
Lawrence M. Moher, M.D.

Abstract

Solutions to the problem of geographic maldistribution of physicians, who are now adequate in total numbers in Arizona and nationally, have taken several directions. At this College of Medicine, a new program, Commitment to Underserved People (C.U.P.), builds upon the career goals of entering students who wish to redress this maldistribution. Jointly moulded by faculty and by students over their four years, this paracurricular program includes peer and faculty support, specific learning experiences, and clinical service with the medically underserved. While its first participants include 20% of the 1983 graduates, the C.U.P. Program must ultimately be evaluated by graduates' career patterns among the unserved.

Key Words: Arizona, Medically Underserved, Medical Education, Medical Careers, Health Manpower.

Introduction

Arizona's unique problems of medical underservice arise from its unusual population distribution and demography. While often considered a rural state, 75% to 87%—depending on "rural" definition[1]—of Arizona's population is urban. Phoenix and Tucson are generally well-supplied with physicians (Figure 1); yet several census tracts in the southwestern parts of these two largest cities are designated as health manpower-shortage areas[2] (Figure 2). Lacking midsized communities (50,000 to 250,000), Arizona has a second underserved population widely scattered throughout its rural areas, including over 100,000 Indians (Figure 3). Many of these Arizonans, both urban and rural, are among the "structurally underserved,"[3] i.e., unable to access health care because of continuing economic, geographic or cultural factors. These "structural" factors

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From: Department of Family and Community Medicine, University of Arizona College of Medicine. Reprint requests to Ronald E. Pust, M.D., Department of Family and Community Medicine, University of Arizona College of Medicine, Tucson, Arizona 85724. Grants to the Commitment for Underserved People (C.U.P.) Program were made in 1979 and 1980 by the Transition Foundation.

continue despite the more-than-adequate national physician supply,[4] its increasing diffusion,[5] and Arizona's favorable 1979 rank (16.7 doctors per 10,000 population) above the U.S. average (18.4)[1] Despite Arizona's 34% population growth between 1970 and 1980, overall physician-to-population ratios have kept pace, since continuing migration from other states contains its proportion of physicians, supplementing the output of the University of Arizona.

Approaches to the problem of physician maldistribution in the U.S.A. have focused either on selection of students or on location incentives for recent graduates. Rural[6] and minority[7] students may be more likely to return to underserved areas. At the University of Arizona, Med-Start, Minority Recruitment Projects and the Admission Committee's consideration of rural residence help to enlarge its pool of applicants from these backgrounds.

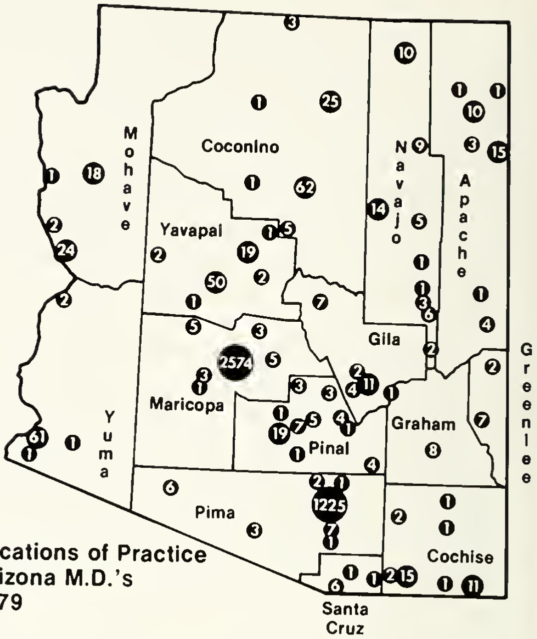
Attempts to influence the geographic distribution of graduate physicians include the National Health Service Corps and various community recruitment and support plans. The Rural Health Office of the University of Arizona links these communities and new NHSC physicians allotted to Arizona.

Despite ample evidence[8,9] that a sizeable proportion of students enter medicine with attitudes favorable to primary care and social idealism, few systematic attempts have been made to nurture these attitudes or build specific skills and knowledge upon this idealism.[10,11] Because of the cautious approach to affirmative action on admissions engendered by the Bakke decision and the reduction of funds available for NHSC and other distribution incentives, medical schools are left with increasing responsibility to reinforce existing student motivation toward underserved-area practice through the curriculum. This option may be more timely than relying only on questionable quotas or expensive incentives.

Following a 1978 seminar on underserved people at the University of Arizona College of Medicine, several students asked the College to work with them in providing a four-year program of experiential learning aimed at preserving their idealism and giving them skills to work among underserved populations.[12] The Department of Family and Community Medicine, which conducted the original seminar, became the base for the ensuing program called Commitment to Underserved People (C.U.P.), though faculty from other primary care departments and community physicians have been involved.

Student Selection and Program Support

On the basis of a 1978 survey, the C.U.P. Program was designed to accommodate ten students from each entering class. However, 20 students from the first eligible class, which entered in 1979, expressed interest in the program. Rather than randomly eliminating half of those interested, which would have produced an ideal control group, faculty accommodated all 20. Student partnership in setting the group's composition and direction has resulted in more enthusiasti participation, flexibility and creativity. This self-hel approach has overcome many of the original resourc constraints, allowing the program to function for fou years on $16,000 in Transition Foundation grants. N salaries have been charged to the program, since th three to five faculty and staff most closely associated a have positions in the mainstream curriculum as thei major responsibility.



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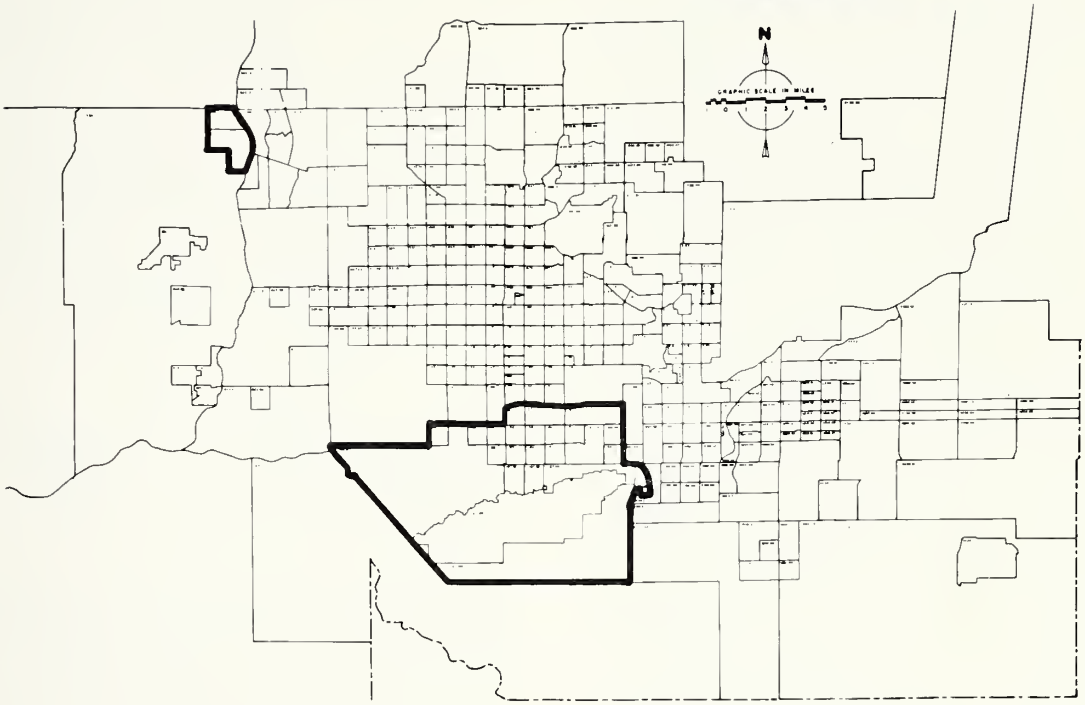
1979

Despite this flexibility through the first four years c the C.U.P. Program, there is a high degree of con gruence with original program elements[12] and a definit core group of 12 to 20 students in each medical class When compared to their classmates, this self-directe C.U.P. group does not differ from them in such factors a ethnicity, size of home town, and type of degree o religious affiliation. Though the medical classes ar about 35% female, about 50% of the C.U.P. students ar women, perhaps confirming sex differences[13] i physician attitudes and values. There is a tendency, no surprising, for informal group leadership to come fron the older members of the C.U.P. group, especially thos with prior work experience in underserved areas.

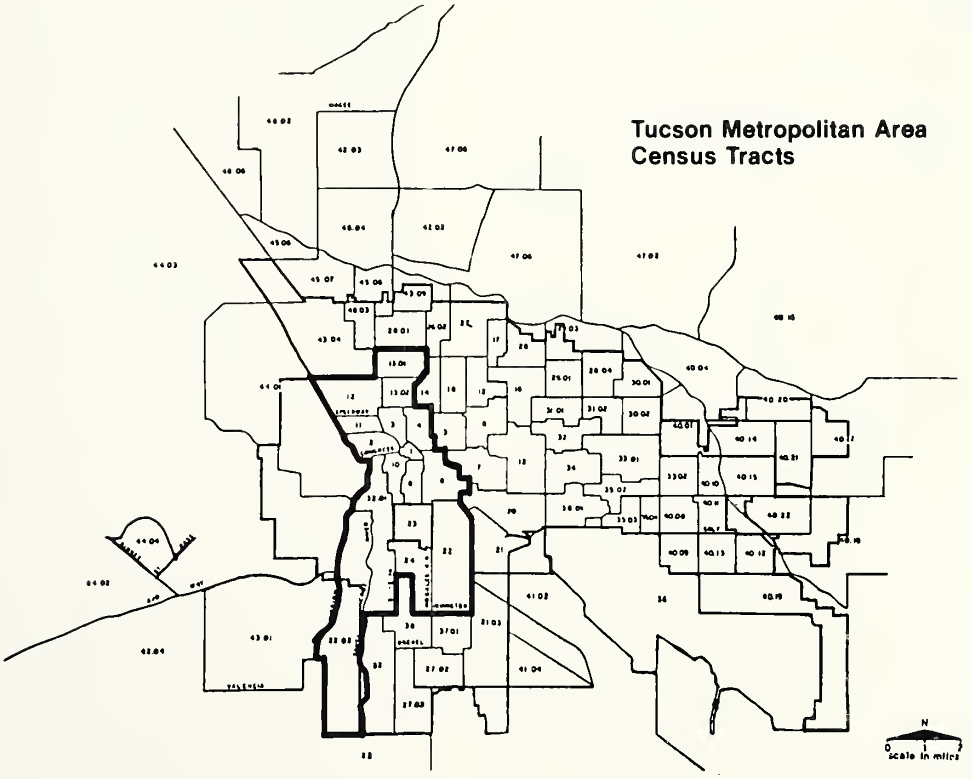
Three Program Elements

Over the past four years, the students have evolvec three areas of concern around which the objectives anc structure of the program have been built. These three areas—*support, curriculum, and service*—which have parallels in personality theory, curricular planning, anc career development are described in the following sections.

Support of Student Idealism: A salient problem facing these students is the paucity of role models clinically experienced in underserved areas. The College of Medicine and its curriculum, mainly based in a tertiary-



Phoenix Metropolitan Area
Census Tracts



Tucson Metropolitan Area
Census Tracts

Health Manpower Shortage Areas

ref: *Federal Register* Dec. 15, 1982

care medical center, are hardly examples of the kinds of challenges C.U.P. students will face in underserved Arizona communities. The pressures, demands and examples derive from high-technology medicine—with little room for the "seat-of-the-pants" approach required in the world of the underserved.

The emphasis of the C.U.P. faculty and community physician advisors is on the realities of underserved practice—the "specialty" of "poverty medicine." They stress comprehensive care accessible in the community's context. One major focus is on the stresses facing all health care providers—beginning with the stresses facing medical students and progressing to the challenges of life in isolated, needy, underserved areas.

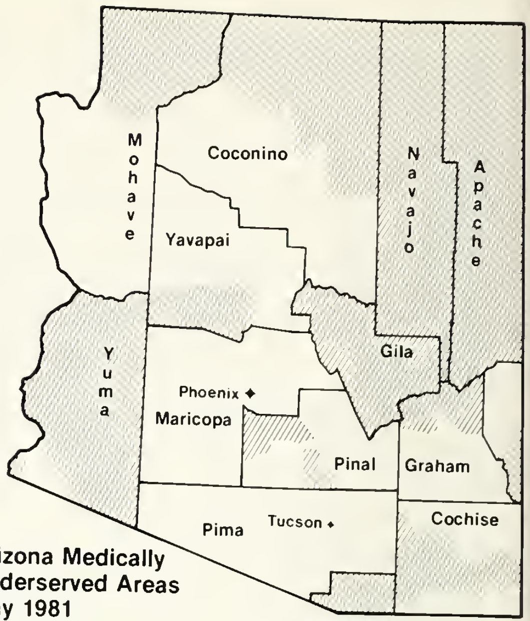
By student estimation, peer and faculty support has played a large role in the success of the program thus far. Faculty advisors, selected by the students during their second year from a small but interested group of faculty experienced in work among underserved, have been available for support and guidance; yet it is largely the esprit and sensitivity of the students themselves that is the major personal support source for the group's members. C.U.P. students are respected for their leadership and viewpoints in the class as a whole; their identification with the ideals of C.U.P. lends legitimacy to these ideals.

Annual weekend spring retreats have combined an educational, evaluative, and support function. There is likewise a powerful element of support in the other two program components.

C.U.P. Curriculum: As a "paracurricular" program, C.U.P. is not a separate "track." In addition to a four-year sequence of noncredit educational experiences, the program utilizes the mainstream curriculum, especially in the Department of Family and Community Medicine, to accomplish its curricular goals. From among students identifying themselves with C.U.P. in their first semester, this Department selects ten to comprise one of nine learning groups in the Department's clinical and community epidemiology block in the Preparation for Clinical Medicine sequence. In this second-semester course, each major topic (Geriatrics, Alcoholism, Nutrition, Public Health/Preventive Medicine, International Health, Occupational Medicine, and Epidemiology) is focused on case-based problem-solving discussions led by the faculty of the Family and Community Medicine Department. The "C.U.P. group," led by a C.U.P. faculty member, discusses the cases from the perspective of a physician in an underserved area.

During their only lengthy vacation, eight weeks following the first year, students may elect a research assistantship exploring health care problems in an underserved community first hand. A recent student spent her time in the barrios of the Dominican Republic with a health care team from Creighton University.

During the Junior year, C.U.P. students are encouraged to take as many of their clerkships as possible in facilities serving underserved populations. The Family and Community Medicine Department
developed six of its thirteen community clerkship si
among underserved populations; these are staffed
C.U.P. faculty or by community physician associates w
career commitments to these populations.



Arizona Medically Underserved Areas May 1981
(Federally Designated)
(See also Phoenix & Tucson Detail Map)

In the elective Senior year, C.U.P. students
expected to spend four to twelve weeks in a clini
preceptorship in an underserved rural or urban area
Arizona, or alternatively in a Third World count
Individual periods of research, independent study,
vacation have been used by several students
contribute to the work of C.U.P., publicizing it
national conventions or designing and administeri
new clinical service projects. Further structur
curriculum is being developed to prepare students f
accurate and effective clinical and manageme
problem solving in the presence of resource constrain
The need for cost containment in *all* medical practi
relates C.U.P. to the general curriculum. Future pla
include regular lunchtime talks, centered on clinic
problem solving in underserved areas—as an electi
activity open to all students.

Service While Studying: At the heart of th
Commitment to Underserved People Program is ear
and sustained experience in actual clinically-relate
service to people in need in the community. In the fir
semester students make exploratory visits to six to te
Tucson facilities providing service to the medical
underserved. In the second and third semester, eac
selects one of the sites at which she/he maintains
weekly three or four-hour commitments to work as
volunteer related to medical or social service care
clients. While most students have worked within suc
diverse community agencies such as the county jail an
church-run health clinics, two clinics meeting speci

nmunity needs have been established directly
ough the efforts of the C.U.P students. Since 1980 a
ekly clinic, *Dar a Luz,* has provided prenatal care to a
ekly average of 20 Hispanic low-income women.
ner C.U.P. students have organized a Saturday clinic
outh Tucson, staffed by students from all four classes
l precepted by C.U.P. physicians.

his direct service to the underserved provides early
port to the students in the way most valued by a
dical provider; that is, by satisfaction derived from a
well done, and the thanks of people in need. Service
provides education both directly, through experience
with diseases seldom seen in tertiary centers,
indirectly, by motivating students to better learn
e medical skills increasing the clinical effectiveness of
ir idealism—now during training and in future
eers.

cussion

lthough the C.U.P. Program was recognized by the
riculum Committee of the College of Medicine at its
eption in 1979 and has since been enthusiastically
eived by 12% to 25% of each class, the ultimate
luation criterion is effective future service by the
gram's graduates in areas of medical need. Even in
future, hard proof of the program's efficacy will be
icult, due to the early decision not to discourage *any*
erested student through random assignment to a
ntrol group. Interim evaluations are in progress,
nparing C.U.P. students graduating in the Class of
3 with their classmates at this and other U.S. medical
ools with regard to attitudes, leadership roles and
eer plans. Influencing specialty choice *per se* is *not* a
J.P. Program goal, though most would be expected to
er primary care.

ecause residency training also has a great influence
future practice, especially its geographic location,
re is need for new graduates to maintain such ties
ring their residency years.[14] Even more important are
reased linkages, especially through fourth-year
ctives, to role-model physicians practicing in the
mmunity and state, particularly those physicians in
derserved areas. The influence of community role
dels on practice can hardly be exaggerated—before,
ring, and after the four years of medical school.

knowledgements

Ve would like to thank faculty, staff, and community
leagues who have participated in the C.U.P. Program.
ven Spencer, M.D., of Ganado, and Douglas Campos-
tcalt, M.D., (Class of 1979) of Phoenix, have remained
uable advisors since their design of the original
ogram in 1979. The students themselves deserve the
jor credit for the continued growth and support of
program.

The Transition Foundation of Los Angeles, through
nces B. McAllister of Flagstaff, provided $16,000 in
nts to initiate the C.U.P. Program.

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Developments in the Treatment of Depression Among the Elderly

Elizabeth Yost, Ph.D.
James Allender, M.A.
L. E. Beutler, Ph.D.
G. Maureen Chaisson-Stewart, R.N., Ph.D.

Abstract

New methods for treating depression among the elderly are currently being sought at the University of Arizona. A program designed to facilitate increased social awareness and the abandonment of depressogenic attitudes is described relative to it application among elderly depressed individuals. This method of treatment is extrapolated from those utilized in other settings for younger populations. The use of this nonmedication based treatment regimen is considered particularly helpful for elderly patients since these individuals are frequently intolerant of many medication regimens which are applicable to younger and often less medically impaired individuals. The cognitive therapy treatment program for depressed elderly concentrates upon systematically monitoring, clarifying, evaluating, and finally changing distorted thought patterns which almost uniformally are present depression. Through the modification of such thoug patterns and even belief systems, the elderly patient taught to be more realistic in their views of themsel and their environment and to avoid particular kinds distortions in thinking which result in low self image sense of helplessness, a negative view of th environment, and other associated cognitive patter deemed to be causally related to depression.

Depression is a significant problem in the Unit States, especially among the elderly. Major depressi disorders affect between seven and eleven percent persons over age 65.[2] Old age is characterized by loss health, mobility and autonomy, of intellectu adeptness, and of friends, resulting in social isolati and lonliness. Such losses are major contributors depression. In addition, poverty often forces old adults to follow an inadequate diet and to live i unattractive surrounding, further contributing t affective disturbance. In many cases, changes and losse come suddenly and accumulate rapidly, leaving littl time for elderly people to make the adjustmen

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From: Elizabeth Yost, Ph.D., Department of Counseling and Guidance, James Allender, M.A., and L. E. Beutler, Ph.D., Department of Psychiatry, University of Arizona College of Medicine. G. Maureen Chaisson-Stewart, R.N., Ph.D. Private Practice, Phoenix. Reprint request to L. E. Beutler, Ph.D., Department of Psychiatry, University of Arizona Health Sciences Center, Tucson, Arizona.

cessary in order to ward off depression.[3,5,6]

Vhen depression is severe enough, suicide often curs. Although in younger populations the pro- rtion of suicide attempts exceeds successful mpletions, the reverse is true for the elderly. Among elderly there are more successful than unsuccessful empts.[5]

he current paper describes both some of the basic ncepts of cognitive therapy and our initial efforts to velop a training program for cognitive therapists. The intenance of depression rests, in part, upon the umptions and beliefs through which individuals filter eir interpretations of the world around them and ents which occur to them. Depressed people, for ample, have a significant tendency to engage in realistic interpretations of their world and of their n behavior. These interpretations are maintained in absence of realistic confirmatory evidence, are self- rpetuating, and are so ingrained that the depressed lividual is frequently unaware of how such attitudes belief systems affect their feelings.

ncreasingly, research is accumulating to suggest that orts to modify these distorted beliefs in such a way as make more realistic and to allow the individuals to idate and change them, significantly ameliorates or luces depression. This research has accumulated oss a wide variety of depressed populations and is cently being applied to the elderly as an alternative to edication therapy. The preponderance of side effects ierent in the use of tricyclic antidepressants often ces elderly populations at risk for long term usage of se substances. Hence, alternatives to medication atment are being sought and the applications of gnitive change procedures show promise in assisting lerly depressed individuals to manage their feelings re effectively.

gnitive Behavior Therapy (CBT)

Cognitive Behavior Therapy[1] is a new approach to the atment of depression. CBT focuses on changing the gative and distorted thinking patterns which are umed to be responsible for the sense of helplessness d hopelessness that characterizes depression. In this atment, the therapist assists depressed patients to ess the ways in which they think about their situation d teaches them how to avoid or change thinking tterns that lead to depression.

The fundamental assumption of cognitive change ocedures is that one's feelings and behavior are only indirect response to situational change. All such sponses are mediated by one's belief systems, memberances, expectations, and assumptions about world. Many of these assumptions and beliefs are ilty and inaccurate because of a long history of faulty rning. However, other belief systems accrue as a sult of negative experiences and while these may be ually faulty, they are self-reinforced in the presence of pression. One comes, for example, to expect negative tcomes of one's behavior if there has been a nsistent history of negative outcome. However, as individuals adopt such expectations they tend to inordinately exaggerate the possibility of negative consequences and thereby, withdraw even from social activities which are pleasurable. Thereafter, such people accumulate increasingly isolated experiences to reinforce their negative views.

The targets of cognitive therapy are the unrealistic beliefs and expectations which cause depression. In these beliefs, which are common to many older adults, there may be an element of truth, but more importantly, there frequently exists a larger element of exaggeration, a tendency to base the belief on inaccurate or scanty evidence, and unrealistic expectations of behavioral consequences. For example, many depressed, elderly people believe, in the absence of other evidence, that lack of contact with family or friends means that they are no longer loved. There is also some evidence that depressed people tend to view their environment as unrealistically complex and dangerous and believe that they must passively conform to demands.[4] This kind of thinking pattern almost universally leads to feelings of helplessness and depression.

Cognitive therapy has developed a finite set of procedures which are usually applied within a time limited treatment relationship (15 to 20 sessions) and which are designed both to increase one's social involvement and to systematically evaluate and change those beliefs which are not conducive to one's feeling of personal control and happiness.

First, CBT procedures are designed to increase the depressed individual's sensitivity to the relationship between thoughts and feelings. The treatment methods demonstrate to the patient that it is impossible to be depressed without having depressive thought and by the same token realistic thoughts are less depressive than unrealistically negative ones.

Second, the procedures are designed to assist depressed elderly individuals to monitor and become aware of the distorted thought patterns which in many instances precipitate but in most instances maintain depression. By cataloguing the patterns of distortion and becoming sensitive to their presence, these thoughts cease to be "automatic" and become more controllable.

Third, once the thought patterns are identified, the depressed individual is systematically taught a procedure to evaluate their validity or truth. The search for alternatives as well as for the distortions that may be present in these thought patterns involves the patient and therapist in a collaborative activity of a quasi-scientific variety. Both become engaged in the search for "evidence" for and against the truth of the depressogenic pattern.

Once more realistic beliefs are identified, the therapist then engages the patient in a variety of experiments designed to reinforce new belief systems and to substitute these for the old ones. In these processes, patients are taught to monitor their feelings and to observe the relationship between these new thought patterns and the internal experiences of anxiety and depression.

Several features of cognitive therapy make it particularly useful in combating the depressogenic attitudes and behaviors that tend to develop easily in older adults and which can lead to depression. For example, the passivity of many older people is countered by facilitating a collaborative relationship between patient and therapist in which the patient is encouraged to take an active role in deciding the direction of therapy, the techniques employed and in designing homework assignments. To ensure patient involvement, the therapist continually asks for feedback, thus reducing the tendency of older persons to be dependent and compliant and to feel helpless and out of control of their lives.

"Experiments" and homework tasks are additional means of combating patient's passivity and their irrational thoughts. Some homework assignments are designed to increase overall social activity levels while others are designed to generate evidence either for or against unrealistic beliefs. For example, an elderly woman who complains of social isolation might be given an assignment to increase the number of times she talks with friends on the telephone during the week. Or a man who believes that he can't help anyone is assigned the task of recording the number of times during the week that someone says "thank you" to him as evidence of his helpfulness.

Cognitive therapy is a highly structured method of dealing with depression in which specific, clear cut, limited goals are set and assignments focus on one therapeutic principle at a time. The structure of the therapy tends to minimize the mental confusion of older adults whose ability to concentrate, to analyze and to synthesize may have diminished because of age or medication.

Training Cognitive Therapists

Cognitive therapy involves a variety of skills and techniques which are different from those acquired through most mental health training programs. However, a basis for the implementation of these skills is to be found in the therapeutic and diagnostic sensitivity acquired by professional practitioners in the course of effective, general training and subsequent experience. In order to facilitate the development of those skills which are specific to the application of cognitive therapy, we have begun developing a training program for mental health practitioners (primarily psychiatrists and psychologists). The current training program is specific in its focus to those problems of depression as they affect the elderly. The training program also is focused on working with groups rather than with individuals, both because such a modality allows a greater number of elderly patients to be served and because the personal contact afforded by groups seems to be especially important for individuals who are frequently isolated from family and friends.

In developing our initial training program, we solicited individuals with psychotherapeutic skills from a variety of Tucson social service agencies as well as from those currently enrolled in mental health training programs in the graduate school and medical school at the University of Arizona. Our initial group of trainees consisted of approximately 20 individuals, including doctoral candidates in counseling and psychology, rehabilitation counselors and individuals from the nursing and counseling professions who were employed in social service agencies in the Tucson community. We required both an interest among trainees and at least one year full-time prior experience as a mental health practitioner. The amount of previous experience in working with elderly populations varied among the participants of this initial group with some having no specific experience and others having jobs specifically designed to serve the elderly. Our trainees varied in age from their mid-twenties to their mid-fifties.

One group of trainees has now progressed through the course of the training program and their effectiveness is being evaluated in a research program designed to assess the effectiveness of this modality of treatment in elderly depressed individuals.

The training program developed in the past two years at the University of Arizona has followed four phases. Each phase selectively eliminates individuals on the basis of performance criteria with smaller groups of trainees being filtered into increasingly higher levels of training. The first training phase, for example, involved the aforementioned group of trainees with whom we met weekly for two and a half hours over the course of twelve weeks. This phase of training was largely didactic explaining cognitive therapy concepts, demonstrating their application through role playing procedures, and involved demonstrations utilizing audio and video tapes. Through the course of this initial training phase, weekly homework assignments were provided to trainees to assist them in the development of technical skills and to provide opportunities for them to obtain feedback on their own skill development. During this time period, lecture material included information on such topics as the structure of cognitive therapy, the diagnostic processes involved in the initial interview, the use of activity schedules, cognitive therapy techniques, countering dysfunctional thoughts, working with suicidal patients, derivation of cognitive schema and problems particular to work with the elderly.

Demonstrations of each of these topics occurred on the same day as the lectures. These demonstrations involved listening to audiotapes of therapists and clients or observations of modeling done in the session by one of the trainers and a trainee. The role playing sessions usually took the form of the trainees breaking into three small groups accompanied by a trainer. In these groups one person acted as therapist and one person acted as client assuming a problem that might be typical of an elderly depressed person. Feedback was given by the trainer and other trainees after the role play. Homework was used to integrate the various aspects of training. It was assigned in conjunction with the lectures and when

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CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angio-edema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see WARNINGS).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration, perforation, or gastrointestinal bleeding can end fatally; however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease, and only after consulting the ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: *Coumarin-type anticoagulants*: The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin: Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS: **Incidence greater than 1%. Gastrointestinal**: The most frequent adverse reaction is gastrointestinal (4 to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). Central Nervous System: dizziness*, headache, nervousness. Dermatologic: rash* (including maculopapular type), pruritus. Special Senses: tinnitus. Metabolic: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).
*Incidence 3% to 9%.

Incidence less than 1 in 100. Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. Central Nervous System: depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. Dermatologic: vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome and alopecia. *Special Senses*: hearing loss, amblyopia (blurred and/or diminished vision, scotomata and/or changes in color vision) (see PRECAUTIONS). Hematologic: neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura eosinophilia, decreases in hemoglobin and hematocrit. Cardiovascular: congestive heart failure in patients with marginal cardiac function, elevated blood pressure. Allergic: syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasms (see CONTRAINDICATIONS). Renal: acute renal failure in patients with preexisting significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. Miscellaneous: dry eyes and mouth, gingival ulcers, rhinitis.

Causal relationship unknown. Gastrointestinal: pancreatitis. Central Nervous System: paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri. Dermatologic: toxic epidermal necrolysis, photoallergic skin reactions. Special Senses: conjunctivitis, diplopia, optic neuritis. Hematologic: bleeding episodes. Allergic: serum sickness, lupus erythematosus syndrome, Henoch-Schonlein vasculitis. Endocrine: gynecomastia, hypoglycemia. Cardiovascular: arrhythmias (sinus tachycardia, bradycardia, and palpitations). Renal: renal papillary necrosis.

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CAUTION: Federal law prohibits dispensing without prescription.

ppropriate in the role playing work. At the beginning of ach training meeting the homework was reviewed and s utility with clients discussed. The value of this training as attested to both by the relatively good attendance, specially in view of the absence of compensation for ainees, and by the high percentage of individuals' nterest in the second phase of training. At the end of the rst phase a role play was videotaped and rated by the ainers to determine which trainees would be chosen as herapists for phase two of the training.

The second phase of training involved a subgroup of ight individuals, selected on the basis of competency riteria. These trainees were observed in adult therapy ctivities with groups of eight to twelve elderly epressed individuals. These groups met weekly for 1½ o 2 hours over a brief treatment regimen of six weeks.

In this second phase of training, therapists worked as airs, the groups were videotaped, and supervisors met veekly with group leaders to review their treatment ctivities. Depressed elderly patients were solicited hrough media and social service agencies to participate n the groups at no charge. Groups were held in the College of Nursing at the Arizona Health Sciences Center and at one local agency. Each group session was tructured into three sections: 1) reviewing homework ssignments, 2) working with individuals on problems dentified by the homework or which recently occurred, nd 3) assigning homework for the upcoming week.

Approximately nine months later the third phase of he training began. In order to be eligible for this phase, herapists submitted work samples which were evaluated for indications of the level of therapeutic skill nd technical proficiency. The seven individuals who demonstrated the greatest degree of expertise in cognitive therapy in their work samples were selected as rainees for this third phase. Training was scheduled for nine, weekly, two hour meetings. We initially attempted to organize the training on the format of the treatment groups themselves. Hence, we set agendas, solicited feedback, encouraged work on personal problems, and gave homework assignments. Each trainee was asked to develop two short lectures on the didactic material which would be covered in the groups. As in the first training phase, both demonstrations by trainees and practice by trainees was used to familiarize the trainees with the application of cognitive therapy approaches.

Initially, in this training phase, cognitive therapy approaches were divided into assessment and intervention techniques and trainees were asked to use specific assessment and intervention techniques in their role plays. This approach was difficult, however, when the problems presented did not coincide with specific techniques. As an alternate, a generic model of a step-by-step model was developed for the tasks of assessment and intervention and this model was presented to the trainees. This approach proved to be much more useful. At the end of this phase of training four trainees were selected by a videotaped role play to lead groups of the elderly in phase four.

Phase four of our program, which is currently under way, involves two pairs of therapists leading groups of eight to ten depressed elderly for 15 weekly, 1½ hour sessions. These groups, which are offered to the elderly at no charge, are filled with volunteers solicited through the media and various social work agencies. Supervision is offered immediately after each group and in a biweekly, 1½ hour review of videotapes. This supervision may be attended by all the trainees who participated in phase three of training in order to extend their learning experience.

In this final phase, trainees are considered to have passed the basic requirements for demonstrated therapeutic effectiveness. Hence, phase four consists of a clinical trial of the treatment effectiveness of CBT. Patients are carefully screened through psychological evaluation and psychiatric interview to insure that they are representative of individuals with major depressive disorders, are not actively suicidal, and are able to function on an outpatient basis. This aspect of the project is funded by Upjohn Pharmaceuticals and a major portion of the study is devoted to determining the relative effectiveness of a new alprazolam derivative (XANAX) and cognitive behavior therapy both alone and in combination.

Initial evaluation of treatment effectiveness is promising. Our patients undergo substantial changes in those vegetive signs which are associated with major depressive disorders, manifest increases in the amount of pleasurable social activity, and report finding the group experience extremely beneficial to improving their outlook on life. These preliminary findings are consistent with those obtained on mid-life and young adults.

It is our plan to continue refining our training procedure in line with results of treatment outcome. We anticipate being able to refine the treatment program itself so it becomes increasingly specific to the problems of the elderly and increasingly powerful in ameliorating those cognitive underpinnings of depression and their attendant symptoms.

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The Physiology and Clinical Usefulness of Common Pulmonary Physical Findings

John L. Carroll, M.D.
James E. Clayton, M.D.
Richard J. Lemen, M.D.

Abstract

Recent advances in pulmonary physiology have provided the knowledge to reestablish the pulmonary physical examination as a valuable diagnostic instrument. The pulmonary examination yields important information not readily available by other methods and can be performed in a minimal amount of time, at no additional cost, with no extraordinary equipment, and with no risk to the patient. Our purpose is to review these recent advances concerning the mechanisms responsible for alterations in chest configuration, digital clubbing, work of breathing, pulsus paradoxus and breath sounds. This knowledge based on physiologic principles, allows the clinician to better understand the mechanisms responsible for these physical findings and to use this information semiquantitatively to diagnose disease and to follow its course.

Table
Common Pulmonary Physical Findings

- Thoracic Configuration
- Digital Clubbing
- Work of Breathing
  - sleeping respiratory rate
  - retractions
    - intercostal
    - subcostal
    - suprasternal notch
    - supraclavicular
  - use of accessory muscles of respiration
- Pulsus Paradoxus
- Lung Sounds
  - breath sounds
    - intensity
    - quality
    - timing
  - adventitious sounds
    - crackles
    - wheezes

Key Words: Physical examination, Clubbing, Thorac Configuration, Work of breathing, Lung sounds, Puls paradoxus.

Introduction

Prior to the 19th century clinical history and physic examination were essentially the only tools available t the practicing physician. With the rise of technology an unbridled enthusiasm for its use by modern physician the physical examination gave way to radiographi electrophysiologic, and laboratory evaluation. Anoth contributor to this change has been that many parts the physicial examination were viewed as unscientifi because they were not based on physiologic principle Recent studies have correlated physicial findings wit pathophysiology allowing for a better understanding their mechanisms. This knowledge together with a risin awareness of the limits, risks, and costs of technology ha given new power to old methods. Our purpose is t review the physiologic foundations of some commo pulmonary physical findings (Table), emphasizing th usefulness of each as a reliable tool for gatherin valuable information at the bedside.

Thoracic Configuration

Increased thoracic volume or "barrel" chest i common in patients with acute and chronic obstructiv pulmonary diseases. It can be assessed qualitatively b inspection as illustrated in Figure 1. Acquired pectu carinatum (pigeon breast deformity) or Harrison's sulci a depression of the ribs anteriorly at the insertion of th diaphragm, are also noted on inspection and ma indicate chronic lung disease.[1]

Thoracic configuration can also be assessed quantitatively by measurements of chest dimensions, whic are usually expressed as the Thoracic Index (TI). Norma reference standards for children of all ages and youn adults are published, and these measurements have als been made on patients with asthma, chronic obstructiv pulmonary disease (COPD) and cystic fibrosis (CF).[2,

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From: Departments of Pediatrics and Physiology, Division of Respiratory Sciences, University of Arizona, Tucson, Arizona 85724. Reprint requests to Richard J. Lemen, M.D., Departments of Pediatrics and Physiology, University of Arizona Health Sciences Center, Tucson, Arizona 85724. Supported in part by an educational grant from 3M Company. Dr. Carroll is a clinical fellow supported in part by the Cystic Fibrosis Foundation and Dr. Clayton is a clinical fellow supported by an educational program of the United States Army.

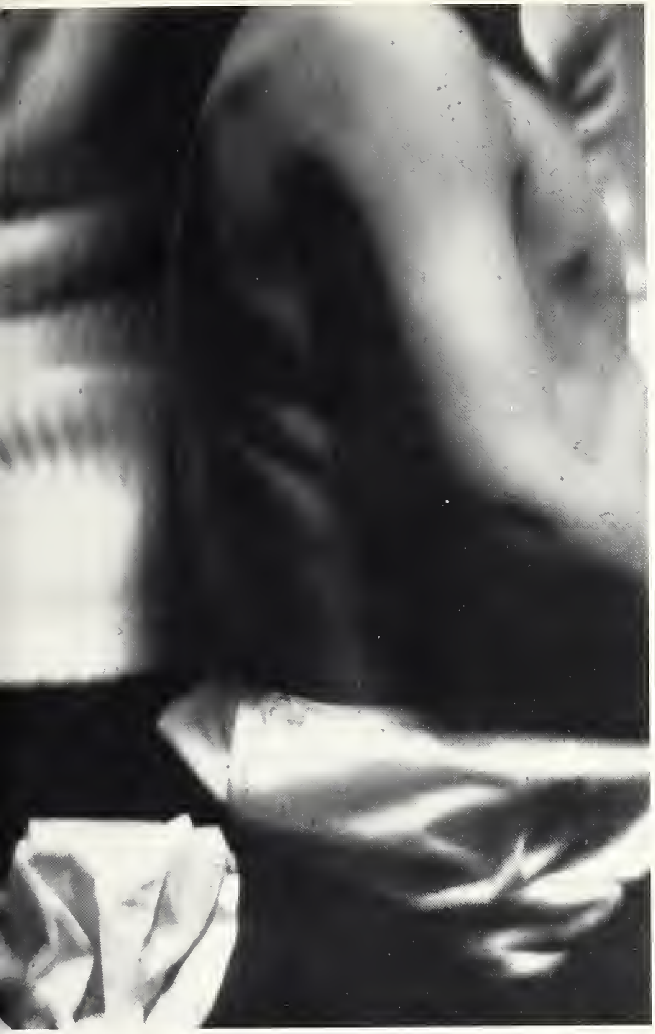

Figure 1
nis two-year-old child with cystic fibrosis has "barrel" chest nd intercostal retraction.

he Thoracic Index (TI) is simply a depth/width ratio of ne chest. It is measured with pelvimetry calipers as the noracic depth (the maximum distance between ernum and thoracic vertebrae in a horizontal plane etween the sternal notch and the xyphoid process) and ne thoracic width (the maximum width from axillary ne to axillary line in a horizontal plane between the ernal notch and xyphoid process). The TI is normally bout 0.85 in young infants, declines to 0.75 as height pproaches 100 cm at about three or four years of age, nd remains at 0.7 to 0.75 into adulthood. In patients ith "barrel" chest it is near or slightly greater than 1.0 ndicating a "rounding" of the chest from the usual llipsoid shape.

Normally the shape of the chest wall is determined by balance between all deforming forces acting upon the ormally rigid thoracic cage. In diseases where marked ir trapping occurs the increased intrathoracic pressures nay cause chronic changes in the chest wall shape esulting in the loss of the normal ellipsoid. The ccurrence of an increased thoracic index is not simply a eflection of air trapping and increased resting lung volume, since even at total lung capacity, the thoracic index is only 0.8 to 0.85 in healthy subjects.

One hypothesis suggests that the mechanism of "barrel" chest is explained by Pascal's principle which states that when pressure is applied to a fluid or gas in an enclosure, the force is equally transmitted in all directions.[4] A simple example is that of inflating a collapsed balloon. As inflation proceeds the tendency to roundness increases.

"Barrel" chest deformity has been shown to correlate significantly with chronic elevation of lung volumes and a reduction of $FEV_{1.0}$ relative to vital capacity indicating chronic airways obstruction in well asthmatic children.[1] Patients with severe but intermittent airflow obstruction do not develop "barrel" chest, emphasizing the importance of chronicity. If Pascal's principle applies, then one would expect changes in chest shape to be greatest in those with the greatest degree of airflow obstruction and air trapping for the greatest length of time. Indeed, the highest thoracic indices in young patients with lung disease are seen with CF followed by patients with asthma. Approximately 14% of patients with cystic fibrosis have thoracic indices greater than two standard deviations above normal while the incidence in asthmatic children is much less. "Barrel" chest may occur with advancing age in adults even without lung disease.

Digital Clubbing

Digital clubbing has been used by clinicians to diagnose cardiac and pulmonary disease since the time of Hippocrates. Although the mechanisms responsible for it are still unclear it is an important clinical sign because it is associated with relatively few diseases, almost all of which are serious. Exclusion of cyanotic congenital heart disease and gastrointestinal diseases such as ulcerative colitis and regional enteritis leaves only pulmonary causes for digital clubbing. These include bronchiectasis, lung abscess, empyema, interstitial pneumonitis, and pulmonary neoplasms. Digital clubbing is commonly the first manifestation of asymptomatic bronchogenic carcinoma. Patients with reactive airway disease never get digital clubbing. Consequently, digital clubbing in an asthmatic patient should suggest diagnostic tests to rule out CF or other causes of serious underlying lung disease.

Fingers and toes appear clubbed because of hyperplasia and hypertrophy of connective tissue in the nail bed and increased vascularity of the distal phalanx. Severe digital clubbing is apparent by inspection of the fingers.[5] More subtle degrees of clubbing and changes with disease course may be less obvious and various methods have been used to quantitate digital clubbing. As illustrated in Figure 2 the distal phalanx in the CF patient compared with the normal patient is larger, however, the depth of the interphalangeal joint is similar. The enlargement and deformity of the distal phalanx has been measured by water displacement, profile angle, hyponychial angle, and clubbing index methods.[6] The water displacement method is too insensitive and is not utilized extensively. Profile and hyponychial angles determined *in vivo* are independent of age and sex; however, these techniques require a special device called a shadowgraph and also have not been widely used. The clubbing index (CI) developed by Waring, et al.[7] uses finger casts of the left index finger (Figure 2) and has been used in several reports. The CI is defined as the ratio of the distal phalangeal depth (DPD) (the midline-thickness of the finger at the nail-skin fold junction), to the distal interphalangeal depth (IPD) (the midline-thickness of the distal phalangeal joint). The normal mean DPD/IPD was 0.895 with a standard deviation of 0.041. A DPD/IPD ratio of 1.0 is 2.5 standard deviations above the normal mean and is a convenient dividing line between normal and abnormal fingers. This estimate can be readily obtained by viewing the patient's finger, however, the cast-micrometer method of estimating DPD/IPD gives better discriminating power. The DPD/IPD in normal subjects is independent of sex, age, height, weight, and race.

Important clinical observations have been made using these various methods. Perhaps the most important are that digital clubbing is a dynamic process that waxes or wanes as the pulmonary disease worsens or improves and that it is completely reversible if the disease resolves or becomes quiescent. These points have been documented in an 18-year-old girl after surgery for tetralogy of Fallot[6] and in patients who were successfully treated bronchiectasis secondary to immune deficiencies.[6] Lemen et al.[8] noted significantly lower vital capacities and Shwachman's scores in a group of CF patients with significant clubbing than in an age and sex matched group of patients with the same disease but without clubbing. Figure 3 illustrates the longitudinal relationship of pulmonary function and digital clubbing in two patients with CF. In both cases the CI decreased and increased as the forced vital capacity worsened with disease exacerbation or improved in response to therapy. Generally, female CF patients have more severe pulmonary disease and more significant clubbing than male CF patients. Digital clubbing has been noted in a child within ten days of a tonsillectomy complicated postoperatively by lung abscess.[6] Severe digital clubbing associated with congenital heart disease or bronchogenic carcinoma may resolve completely if the primary disease is cured. Normal patients with a severe pulmonary insult such as hydrocarbon aspiration or near drowning, can develop clubbing within two weeks.

The etiology of clubbing is unknown although there is evidence that the responsible agent is a vasodilator substance that is normally present in venous blood and is deactivated by the lung prior to reaching the systemic circulation.[6] It has been suggested that reduced ferritin is responsible for this phenomenon. As a result of shunting or pulmonary injury, this vasodilator substance reaches the systemic arterial circulation where it perfuses the fingers, opens arteriovenous shunts, and clubbing results. Compared to normal subjects and CF patients without clubbing, those with clubbing have significantly higher concentrations of PGE_2 suggesting possible vasodilator role of prostaglandins in th etiology of clubbing.[8]

Work of Breathing

Work is necessary to stretch the lungs against th elastic forces tending to collapse them and to overcom the flow resistive properties of the airways. Increase work of breathing is indicated by increased sleepin respiratory rate, use of accessory muscles of respiration and various types of retractions. Careful observation a the bedside can provide useful information for assessin severity of illness and following progress durin treatment.

Many factors influence respiratory rate such a voluntary control, anxiety, hypoxia, hypercapnea, slee state, pH, and others. Sleeping respiratory rates don during quiet, non-REM sleep may be compared t normals for age[6] but more importantly can be used t follow trends in the course of disease in the individua patient. We instruct parents of bronchopulmonar dysplasia (BPD) patients to keep a respiratory rate lo and record the rate three times every day during restfu sleep. A downward trend in sleeping respiratory rat towards normal reflects improving lung function Exacerbations in lung disease caused by infection or co pulmonale are indicated by an increase in the sleepin respiratory rate. This holds true for infants in genera with any type of lung disease.

Retractions are generally described as supraclavicular suprasternal notch, intercostal, and subcostal in locatio as illustrated in Figures 1 and 4. All types indicat disordered physiology with increased work o breathing. Retractions are primarily due to abnormall negative intrapleural pressure relative to atmospheric thus causing a bulging inward of adjacent complian chest wall tissues (Figure 1). The degree of inwar bulging is roughly proportional to the magnitude of th intrapleural pressure changes. The patient with obstructive lung disease, as in status asthmaticus, wil have greater airway resistance to overcome and wil have large negative intrapleural pressure swing indicated by intracostal retractions. If expiration is als obstructed, intercostal bulging may be noted an reflects large positive intrathoracic pressures.

Respiratory pattern and rate also affect the magnitud of retractions. The anxious asthmatic patient ma breathe vigorously with mild airway obstruction an have significant intercostal retractions; whereas a calm individual with a severe degree of airway obstruction may breathe quite slowly with large tidal volumes an retractions may be minimal.

Supraclavicular and suprasternal notch retraction have the same basic mechanism as intercostal retraction and are usually seen in more severe respiratory distress Since the sternocleidomastoid muscles insert at the sternoclavicular junction and form the lateral borders o the suprasternal notch, their use causes any retraction o tissue between or on either side of them to be exaggerated in appearance.

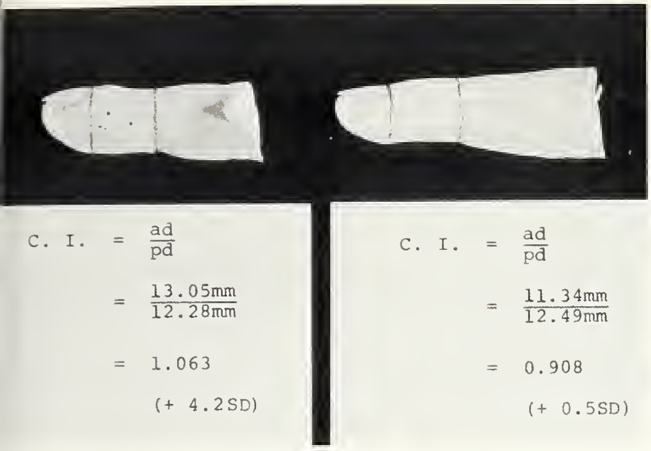

Figure 2
nger casts of the left index finger of a cystic fibrosis patient ›ft) with digital clubbing and a normal subject (right) are own. Both are sixteen years old (see text for explanation).

Inward motion of the anterior border of the rib cage uring inspiration (Figure 4) is referred to variously as ıbcostal retractions, costal margin retractions, costal ıargin paradox, and Hoover's sign.[9] The normal motion f the rib margin during quiet inspiration is upward and utward in adults and children beyond infancy. aradoxical inward motion during inspiration seen in atients with obstructive airway disease reflects yperinflation with air trapping. The flattened diahragm can no longer descend with contraction but mply exerts inward traction.[9] In infants the diaphragm ormally inserts more horizontally, the specific ompliance of the rib cage is greater than normal and ıat of the lung is lower. Thus, greater distortion of the b cage is expected in infants and indeed virtually all ıfants in respiratory distress will have marked costal ıargin retractions reflecting their increased work of reathing. Costal margin retractions may be simply bserved or judged by palpation and, as with other igns, are graded as mild, moderate, or severe.

The sternocleidomastoid muscles are not used in uiet respiration and thus are truly accessory muscles of espiration. Their use may be seen in any type of severe espiratory distress and has been correlated with the legree of airway obstruction. Patients with obstructive ung disease such as asthma or CF have air trapping with n increased residual volume and flattened diaphragms. Vhile breathing at high lung volumes with impaired liaphragm function the use of the sternocleidomastoid nd scalene muscles to expand the rib cage becomes ıecessary. A palpable hardening of these muscles may eflect chronic overinflation of the chest as in COPD. In ıdults[10] and children[11] with status asthmaticus, the only physical sign consistently correlated with severity of ıirway obstruction was sternocleidomastoid muscle contraction. This may be assessed by observation or palpation and has been shown to be another useful guide to efficacy of therapy.

ʼulsus Paradoxus

A "regularly waxing and waning" pulse in concert

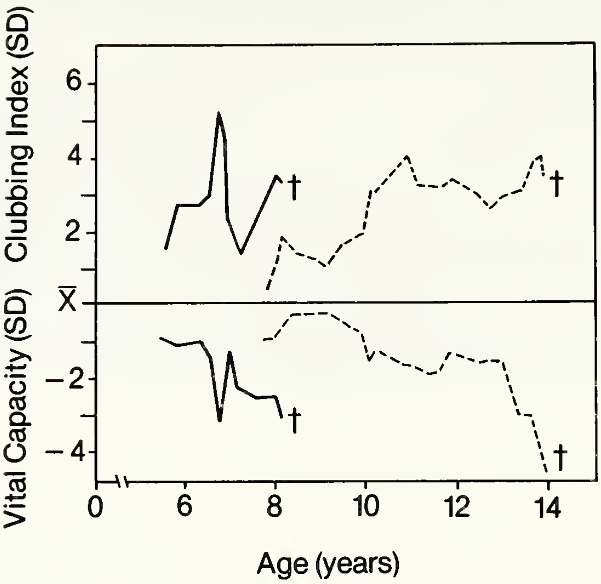

Figure 3
Clubbing Index (CI) and forced vital capacity (FVC) are shown longitudinally for two cystic fibrosis patients (solid and dashed lines, respectively). (See text for explanation.)

with the respiratory movements of the chest was termed paradoxical pulse by Kussmaul in 1874. This phenomenon, now known as pulsus paradoxus (PP), occurs to a small degree normally. In patients with pulmonary disease increased PP reflects fluctuations of intrapleural pressure and is an indicator of airflow obstruction. It is useful as a guide to severity of disease and in a given individual it is useful in following the course of the disease and the efficacy of treatment. Although in cooperative adults PP has not been shown to be superior to peak expiratory flow rate, it is clearly superior in adults or children who cannot or will not perform the peak flow maneuver.

During inspiration the arterial blood pressure and pulse pressure decline, only to increase again during expiration. The variation in systolic blood pressure between inspiration and expiration is normally less than 10 mm Hg, but it may be increased in patients with lung disease and even detectable by palpation of the peripheral pulse. The term "paradoxical" was originally chosen by Kussmaul to refer to the curious observation that the pulse waxed and waned while the heart beat remained regular. It is merely an accentuation of the normal fluctuation of blood pressure. The direction of variation is not paradoxical.

The standard method for measuring PP is to inflate a sphygmomanometer cuff on the upper arm to approximately 200 mm Hg and slowly deflate while auscultating the brachial artery as in the usual method of determining blood pressure. The pressure at which the systolic Korotkoff sound is first heard, during expiration only, is noted. As deflation continues a point will be reached at which systolic Korotkoff sounds are heard

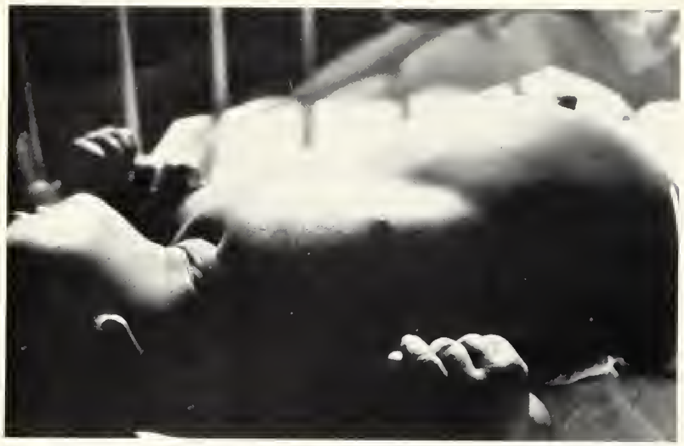

Figure 4
This nine-month-old infant with bronchiolitis has suprasternal, supraclavicular and subcostal retractions.

during the entire respiratory cycle. This pressure is noted and subtracted from the first; the result, if greater than 10 mm Hg, is termed PP and indicates disordered physiology. The same procedure may be followed using the sphygmomanometer but palpating the brachial pulse to note the difference between inspiration and expiration of the systolic blood pressure. Indeed, simple palpation of the radial pulse can detect changes in pulse amplitude indicative of PP although this method is not quantitative. PP can be determined in rapidly breathing infants if the sphygmomanometer cuff is deflated more slowly, and may be measured on indwelling arterial line blood pressure monitors with an oscilloscope screen. Accuracy of all measurements may be increased by averaging three determinations.

PP occurs during loaded breathing due to increased inspiratory or expiratory air flow resistance and in cardiac tamponade and congestive heart failure. Intrapleural pressure is negative during inspiration and may reach -40 cm H_20 in asthmatic subjects with increased airway resistance.[12] This varies inversely with vital capacity and is a good indicator of severity of disease. PP is due to decreased left ventricular output during the inspiratory phase of respiration. The left ventricle must work to overcome not only aortic pressure to expel its stroke volume but must also overcome the negative intrapleural pressure; thus afterload is increased and blood pressure momentarily declines.[13-15] PP is independent of lung volume[16] and "hyperinflation."[17]

Right heart volume also affects the magnitude of PP. The drop in blood pressure during inspiration is less when right heart volume is kept constant and not allowed to increase.[16] Indeed, in cardiac tamponade and congestive heart failure the effects of right heart volume and ventricular interdependence may predominate. Neurally mediated reflex blood pressure changes with respiration are not significant.[13-15] The contribution of direct transmission of intrathoracic pressure to great vessels has also been a source of controversy. By keeping aortic flow constant during intrapleural pressu variation, it has been shown that this alone cann account for the degree of blood pressure variations see in pulsus paradoxus.[14] Systemic vascular resistance do not fall during inspiration due to peripheral vas dilation, thus eliminating the possibility that brachi artery blood pressure does not reflect changes in aort blood pressure.[13]

The use of PP for evaluating patients with obstructiv lung disease has been a popular concept for many year There is a direct relationship between intrapleur pressure and pulsus paradoxus. Respiratory frequenc and pattern also affect the magnitude of puls paradoxus. In adults with asthma a PP greater than 1 mm Hg is associated with significantly greater airflo obstruction evidenced by a decreased FEV_1, increase $PaCO_2$ and increased pulse rate.[18,19] There is, however, high degree of variability between patients which probably due to differences in respiratory pattern.

In children with acute asthma attacks an increase in P correlates directly with increased $PaCO_2$ but cannot b used as a predictor in individual patients again due to large degree of variability. However, when the $PaCO_2$ greater than 41 mm Hg the PP was always greater than 2 mm Hg. The absence of pulsus paradoxus greater than 1 mm Hg is rarely associated with hypercapnea. In patien treated effectively with inhaled bronchodilators an intravenous aminophylline, as indicated by increasin peak expiratory flow rates, the PP declines and is a usef guide to response to therapy.[20] A significant associatio has been found between PP and a clinical severit scoring system that assessed retractions, degree wheezing, anxiety, and air exchange. No asymptomati patient had a significant degree of PP.[21] PP should not b used to assess pulmonary function in the presence congestive heart failure or cor pulmonale.

Lung Sounds

In 1816 Laennec invented the stethoscope an through its use subsequently developed a genera classification for breath sounds. He used the term "rale" and its Latin equivalent "rhonchus" to describ adventitious breath sounds and laid the groundwork fo the evolution of a great deal of confusing terminology

A new terminology has recently evolved whic eliminates the previous confusion regarding lun sounds.[22] Sound generated within the chest is divide into two broad categories, breath sounds and ad ventitious sounds. Breath sounds are further classified a either normal or abnormal, and by their timing, quality and intensity. Adventitious sounds are either continuous and are called wheezes, or interrupted an termed crackles. These sounds can be defined i acoustical terms and have gained general acceptance.

Breath sounds are heard over most of the chest, bu the quality and intensity of these sounds varies with th site of auscultation. Over large airways and over th trachea bronchial or tracheal breath sounds are heard These have a tubular quality, are loud and harsh, and ar heard over a wide range of frequencies from 60 to 100

. Bronchial breath sounds are heard throughout the spiratory cycle but are louder during inspiration. uscultation over more peripheral airways reveals rmal or vesicular breath sounds. These are softer, ore musical, heard only during inspiration, and most their energy content is between 100 and 300 Hz.[22] nce this is a continuum there is an intermediate zone in hich "bronchovesicular" breath sounds may be heard.

The mechanisms responsible for breath sound gen- ation are now known. As gases move through the rways vibrations due to turbulence within the gas or om the walls of the airways are transmitted through the ng tissue to the chest wall and are heard with the ethoscope as breath sounds. In the trachea and first veral generations of bronchi airflow is turbulent, nerating sound which varies randomly in amplitude th an even frequency distribution between 200 and 00 Hz. and is referred to as white noise.[23] This sound vels in two directions from its source, upward toward e mouth and downstream toward the periphery rough the lung parenchyma and to the chest wall. Gas w in peripheral airways is not turbulent and is of sufficient velocity to produce sound.[23]

A variable amount of energy is lost during passage etween the lung and chest wall depending upon the coustical matching of the two media. The attenuation sound at this interface is slight in children and thin dults, and much greater in obese patients. The fre- uency spectrum of breath sounds heard at the chest all is determined mainly by the filtering action of the ng,[23] which acts as a low pass filter attenuating equencies greater than 200 Hz by 10 to 20 deci- els/octave. Thus, lung tissue selectively passes low equency sounds and this difference in filtering robably accounts for the difference in frequency etween bronchial and vesicular breath sounds. Fluid or r in the pleural cavity forms a complete acoustic arrier, whereas a thin film or fluid such as a small eural effusion filters lower frequencies. In the absence f fluid or air in the pleural space, the airflow in the nderlying lung determines the loudness or intensity of e breath sounds heard at the chest wall.

Abnormal breath sounds are either due to decreased rflow in the underlying lung segment, alterations in e filtering characteristics in the lung, or alterations in e characteristics of the lung-chest wall interface. Thus, artial obstruction of an airway will result in diminished r flow and a diminution in the intensity of breath ounds heard over that lung area. Increased tissue ensity between the source of sound production and e chest wall, such as occurs in consolidation or electasis, will enhance the transmission of higher equencies thus eliminating the low pass filtering effect nd resulting in bronchial or tubular breath sounds in reas where they are not normally heard. Large pleural ffusions or pneumothorax will alter the lung-chest wall nterface and result in little or no transmission of breath ounds through the chest wall. The timing of breath ounds is also important. A significant delay of air entry into one lung relative to the other may indicate the presence of a unilateral obstruction, such as a foreign body, or a mass lesion.

Discontinuous adventitious sounds, or crackles, are a sequence of short interrupted sounds with a wide range of frequencies between 200 and 2000 Hz. They may be described as high or low pitch and fine or coarse, depending on their amplitude and frequency and may be heard during any phase of the respiratory cycle.[23]

Crackles can be shown, by wave form analysis in an individual patient to recur with the same timing and frequency in serial respiratory cycles at the same transpulmonary pressures. They are generated when a closed airway suddenly opens, allowing an explosive equalization of pressure between the upstream and downstream segments. Crackles indicate the presence of airway closure during tidal breathing and occur with virtually every type of lung disease. They are usually associated with parenchymal disease and decreased lung compliance.

Continuous adventitious sounds or wheezes last longer than 250 milliseconds and are musical in quality with a broad acoustical spectrum in which most of the energy is contained in harmonically related frequencies, with the lowest fundamental frequency setting the pitch. In diseases such as asthma or cystic fibrosis, bronchi may be narrowed to the point where the walls are almost in contact, but can be separated by the pressure of gas being conducted within. As the gas is forced through the narrow opening the walls oscillate rapidly between being open and closed and produce a single musical note. The pitch of the note is determined by the mass and elastic properities of the oscillating tissue, and is independent of bronchial dimensions and gas density.[23]

Wheezes may be of two types. Polyphonic wheezing represents multiple, different pitch, discrete wheezes which start and stop simultaneously. Polyphonic wheezing heard throughout both lung fields during inspiration or expiration is indicative of widespread airway narrowing such as occurs in asthma or pulmonary edema. A monophonic wheeze is a continuous musical sound which varies in intensity and pitch, and is generated by a single vibrating airway. A loud, low pitched monophonic wheeze suggests obstruction of a single large airway as in foreign body aspiration or bronchogenic carcinoma.[23]

Ausculatation of the chest involves listening sysmatically to each segment of both lungs. One should note if breath sounds are normal or abnormal, and if adventitious sounds are present or absent. If breath sounds are abnormal then their quality, timing and intensity at each location on the chest wall is determined. If adventitious sounds are present, then their nature and timing with respect to the phase or the respiratory cycle is also noted. By combining this information with a knowledge of physiologic correlations the precise nature of the disease process can be determined.

Summary

The pulmonary examination can yield important and useful physiologic information if the mechanism of each physical sign is understood. Furthermore, it can be performed in a minimal span of time, at no additional cost, without extraordinary equipment, and without risk to the patient. Recent advances in pulmonary physiology have provided the knowledge to remove the pulmonary physical examination from the realm of rote empiricism, and return it to its place as a valuable diagnostic instrument.

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Arizona's Unique Allergens

Jacob L. Pinnas, M.D.

Introduction

In Arizona regional allergens can sensitize residen and visitors to produce unique problems. Thes allergens are primarily pollen, fungi and insect-derive It is important to realize that Arizona is not an "allerg free haven," but that it has its own unique attributes wit advantages and disadvantages for people with geneti predisposition to develop allergic reactions.

For several decades, patients with rhinitis and asthm were led to believe that they could "send their sinuses t Arizona," and such a move would eliminate all futur

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From: Department of Internal Medicine, Jacob L. Pinnas, M.D Associate Professor, University of Arizona Health Sciences Cente Tucson, Arizona 85724. Reprint requests to Clinical Immunolog Section, University of Arizona Health Sciences Center, Tucso Arizona 85724.

ergy problems. In the 1930s and 1940s patients with ronic lung disease, including asthma, chronic obuctive pulmonary disease, and some who were ought to have tuberculosis, were told that Arizona was eir only hope. Some of these patients recovered or proved and are still alive today. However, in recent ars, some people with asthma who moved here are ding either short-lived improvements, a change in the asonal pattern of their disease or a development of ergic respiratory disease in another family member. e pathophysiology of these diseases has been viewed recently.[1]

What factors may be contributing to improvement or acerbation of allergic respiratory disease?

ie Environment

It was once thought that dry desert air was responsible r the improvement which asthmatics frequently ported after arriving here from metropolitan and astal areas. However, studies in which the temerature and humidity of air are controlled have vealed that inhalation of cold, dry air can precipitate heezing in patients with asthma but that the loss of eat and humidity from the respiratory tract is an nportant precipitating factor in exercise-induced thma. Furthermore, warm, moist air was shown to revent exercise-induced asthma.

ust

The population of Arizona resides at locations from a level to mountainous regions above 6000 feet but ost people are concentrated in Phoenix (around 1500 et) and Tucson (around 2500 feet). The housedust mite ves in upholstered furniture, bedding and housedust. It rives in humid environments (greater than 50 percent elative humidity) near sea level (below 1500 feet) in any parts of the world, but it is not found at higher evations such as Albuquerque, Denver and Salt Lake ity, and most of Arizona. Outdoor dust in desert areas ontains fine particles which can serve as irritants. uring windy weather, aerosolized dust also can contain lergenic pollen and fungi which have settled in the oil.

ollen

The desert areas are not pollen-free, and Tucson and hoenix have similar plant flora. Tucson, a good xample of an urbanized desert city, is unique in that it as the longest daily consecutive pollen records in xistence. Since World War II there has been a ten-fold ncrease in pollen counts, attributed primarily to ncreased numbers of bermuda grass, mulberry and live tree pollen.[2] The use of these nonnative plants was naive attempt to turn the desert into a green "tropical aradise" with lush lawns and numerous shade trees. urthermore, disturbing the soil has enhanced the rowth of weeds such as careless weed and tumbleweed n the goosefoot family as well as rabbit bush and other lesert ragweeds.

Since only a minority of people are allergic to any one lant, it has been difficult to get community-wide action to eliminate or reduce the numbers of allergenic plants in the Tucson area. Not only do people continue to introduce the allergenic plants mentioned above, but recent landscaping practices have introduced decorative allergenic grasses such as fountain and pampas grasses which have become popular in front of homes, businesses (especially banks), and municipal buildings. Pecans have become a cash crop in Arizona and these trees produce allergenic pollen. Other trees such as ash, cottonwood, elm and tamarisk can be allergens but these are decreasing in number due to changing landscape practices and perhaps a fall in the underground water table.

Certain trees appear to be less or nonallergenic, particularly citrus, eucalyptus and palm, but for many exotic new plants, the allergenicity may not become apparent for several decades because little or no data is available for these varieties. In general, plants which are wind-pollinated, are more allergenic and plants with beautiful flowers tend to be animal pollinated and, therefore, less allergenic.

Since desert plants, such as cacti, usually have bright flowers and are pollinated by birds and insects, it would be preferable to use these plants which are more harmonious with the environment and require little or no watering. Hybrid Bermuda grass, which propagates asexually and has ineffective pollen-producing apparatus, provides the advantages of a resilient grass without the problem of allergenicity.

In order to make proper landscaping choices for the future it will require not only education and wisdom, but studies of relative allergenicity to identify allergens and cross-reacting allergens in other plants, in order to provide a database upon which to make future decisions. In this way, one may be able to predict whether a tree will be allergenic before it is planted in large numbers and whether a person moving to Arizona already has preexisting allergic antibodies of the IgE class against allergens in his present environment which will produce symptoms in his new environment.

Fungi

Another class of allergens, fungi, also thrive in humid environments, and although present in desert climates, are less abundant in Arizona than in most other areas of the United States. A major allergenic fungus, Alternaria, which grows on decaying plant material and other moist surfaces, has increased five to tenfold during the last twenty years in southern Arizona possibly due to an increased substrate of trees and grasses in the urbanized desert.[3]

The use of evaporative coolers in the desert Southwest provides a niche for certain potentially allergenic fungi to multiply which can subsequently enter the home. Furthermore, the fungus, *Coccidiodes immitis*, which may contaminate outdoor dust, is usually not considered an allergen, but, on occasion, can induce IgE antibodies in some mold-sensitive individuals who develop pulmonary or disseminated infection.

Insects

Due to the limited water supply, there are fewer bees, wasps, yellow jackets and hornets in Arizona, but some of these Hymenoptera, particularly honey bees, can be found near swimming pools, lawns and flowers. Another Hymenoptera, the Harvester ant, with its large head and red, brown or black body, can sting, introducing venom, which can result in anaphylaxis.[4] Reports of anaphylaxis from Harvester ants appear to come in waves with some high years and some low years for reasons which are difficult to explain.

The imported Fire ant which was introduced into Southeastern United States and has migrated to central Texas is not yet a problem in Arizona, but there is a domestic Fire ant in Arizona whose sting can occasionally produce anaphylaxis.[5]

An important regional allergen is the Kissing bug, genus *Triatoma* a reduviid bug which normally resides in the foothills in packrat nests feeding upon mammalian blood. Occasionally Kissing bugs enter homes and their painless bites during sleep can produce unexplained generalized angio-oedema and anaphylaxis secondary to allergenic saliva.[6] The two major species in Arizona *Triatoma rubida* and *Triatoma protracta*, can induce potentially fatal reactions. The true incidence of this sensitivity is unknown but it is probably more prevalent than we realize. Our laboratory has developed a serum RAST (radioallergosorbent rest) to detect sensitivity to saliva from these bugs but specific treatment is still in the investigative stage. Other bugs such as cockroaches, and perhaps crickets, produce secretions which contain strong allergens and may be found in housedust.

Summary

Arizona is not an "allergy-free haven" but does have unique allergens. Non-native pollen, primarily Bermuda grass, introduced trees and weeds which grow in disturbed soil and have become problems for allergic individuals. Fungi are increasing with increased watering and irrigation practices. Certain insects, particular Harvester ants and Kissing bugs, present problems for sensitized individuals. Physicians sending patients to Arizona and physicians in Arizona who are providing care for these patients, should be aware of allergens which are unique to Arizona.

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The Hepatitis B Vaccine

Richard E. Sampliner, M.D.

Abstract

The availability of the hepatitis B vaccine offers th opportunity to eleminate the complications of hepatit B infection. The adverse outcome and serology hepatitis B are reviewed. The proven efficacy and safet of the vaccine are discussed. High risk populations wh should receive the vaccine are outlined.

Key Words: Hepatitis B Vaccine, Health Car Personnel.

Hepatitis B vaccine has been available in this countr since July of 1982. At the time of this writing, it ha already been administered to over 200,000 individual Because the vaccine has the potential to eliminate th sequelae of hepatitis B and because of the high risk c hepatitis B infection in health care professionals, a understanding of the vaccine and its application essential. Before reviewing the efficacy and safety of th vaccine, the impact of hepatitis B and the serology c hepatitis B will be summarized.

From: Department of Medicine, Veterans Administration Medic Center and Arizona Health Sciences Center. Reprint requests t Richard E. Sampliner, M.D. (111G), Gastroenterology Sectio Veterans Administration Medical Center, Tucson, Arizona 85723.

Table 1

Antigens	Antibodies
HBsAg - Surface	Anti-HBs
HBcAg - Core	Anti-HBc
HBeAg - e	Anti-HBe

Table 2
Vaccine Candidates

- Clients and staff of institutions for mentally retarded
- Hemodialysis patients
- Immigrants from Hepatitis B endemic areas
- Users of illicit parenteral drugs
- Homosexually active males
- Household contacts of Hepatitis B carriers
- Health care personnel with frequent blood contact
- Infants of HBsAg-positive mothers

Two hundred thousand acute cases of hepatitis B are
timated to occur each year in the United States.[1] One-
arter of these cases are icteric and five percent are
spitalized. Initial mortality is attributable to the one
rcent or less with a fulminant course—patients who
velop advanced hepatic encephalopathy within a
onth of onset of symptoms. The long term morbidity
d mortality ensues in the six percent to ten percent of
ute cases who go on to become chronic carriers of the
patitis B surface antigen (HBsAg). An estimated 4,000
ses of cirrhosis and 800 cases of hepatocellular
rcinoma result from this pool of chronic carriers.
rrhosis occurs in the subgroup of carriers in whom
patitis B infection initiates a progressive inflammatory
ocess in the liver—chronic active hepatitis. In addition
the personal impact of hepatitis B on the health of
dividuals, chronic carriers represent a long term
blic health problem. These carriers of HBsAg serve as
e reservoir for hepatitis B and are the source of
nsmission of hepatitis B infection.

The major routes of hepatitis B transmission are
rinatal, percutaneous and permucosal. The perinatal
ute—transmission from mother to infant—is of
eatest import on a global basis accounting for much of
e transmission in geographic areas with a high
evalence of hepatitis B infection. The percutaneous
ute is most clearly in evidence in the health care field
d in individuals who use illicit parenteral drugs. The
rmucosal route is important for male homosexuals
d for heterosexual contacts of patients with acute
patitis B.

Why some individuals with acute hepatitis B become
ronic carriers and others normally clear the viral
fection is not clear. However, there are certain risk
ctors which have been identified that make the
ronic carrier state a more likely outcome of hepatitis B
fection. Most prominent is neonatal infection; less
an ten percent of adults with acute hepatitis B will
ecome chronic carriers whereas up to 90% of infants
fected with hepatitis B will become chronic carriers.[3]
nother risk factor is gender, with males nearly twice as
kely to become carriers as females. Also, patients with
mune deficiency are more likely to become carriers—
e best example being hemodialysis patients.

Although the serology of hepatitis B is complicated,
e serologic tests are commercially available and an
nderstanding of serologic results is essential for
nderstanding viral hepatitis. There are three distinct
tigen-antibody systems for hepatitis B (Table 1). The
epatitis B surface antigen was discovered by Blumberg
in an Australian in 1964.[4] This antigen coats the hepatitis B virus. The core antigen (HBcAg) is the only antigen that does not freely circulate in the serum—it is the inner component of the complete hepatitis B virus. The e antigen (HBeAg) is a cryptic component of the core. The detection of HBeAg indicates an active viral replicative phase of hepatitis B infection. HBeAg is always present in the early phase of hepatitis B infection. Its persistence for greater than ten weeks indicates a protracted infection.[5] However, the greatest utility of HBeAg is as a marker of infectivity—given an appropriate exposure, a carrier with HBeAg is much more likely to transmit hepatitis B than a carrier lacking HBeAg.[6] Chronic carriers of HBsAg from different carrier populations have different frequencies of HBeAg: carrier volunteer blood donors—nine percent, carrier homosexual males—61%, and carrier dialysis patients—71%.[7] The 90% of individuals who recover completely from acute hepatitis B are left with anti-HBs as a serologic indicator of resolution.

The frequency of HBsAg in a population reflects the prevalence of chronic carriers. The frequency of anti-HBs is an indicator of a population's past experience with hepatitis B. By looking at the frequency of all hepatitis B markers, we can rank populations as to their likelihood of exposure to hepatitis B. Populations with a high frequency of B markers are at high risk and therefore are likely candidates for the hepatitis B vaccine (Table 2).[1] Hospital personnel are a group with a well documented increased risk of exposure to hepatitis B. This risk is a function of blood contact rather than patient contact.[8] The risk of blood contact is emphasized by data demonstrating that laboratory workers and surgeons have a frequency of B markers in the range of 20% whereas psychiatrists have a frequency of less than five percent. The latter frequency is similar to that of volunteer blood donors, our best estimate of the normal population. Health care workers' risk of hepatitis B increases with the degree of blood contact and varies with the specific occupational task of the individual. The risk increases with increasing years of occupational exposure.

The hepatitis B vaccine is unique in the annals of medical history. It has been developed in the absence of the capability of growing the hepatitis B virus in cell culture. Because of the unique overproduction of

Table 3
High Risk Health Care Personnel

Laboratory Technologists
Operating Room Staff
Phlebotomists
Surgeons
Pathologists
Oncology Staff
Dialysis Staff

HBsAg by the infected host hepatoyte, the surface antigen can be harvested from human chronic carriers. The harvested plasma is physically separated to concentrate HBsAg. There are three steps in the vaccine production process each of which independently would render the plasma noninfectious: pepsin digestion, urea denaturation, and formalin inactivation. These steps provide a built-in margin of safety, as does the testing of each lot in chimpanzees.

A number of vaccine trials have demonstrated efficacy in target populations—male homosexuals,[9,10] hemodialysis staff[11] and patients[12] and infants born to carrier mothers. These trials have demonstrated that the development of anti-HBs by the vaccine recipient is an indication of protection. The vaccine has been demonstrated to be immunogenic—90% of recipients develop anti-HBs. Furthermore, the vaccine has been demonstrated to be efficacious with a reduction in the incidence of acute type B hepatitis by 92%. Almost all individuals who develop anti-HBs after vaccination have been protected against acute type B hepatitis, asymptomatic hepatitis B infection, and chronic antigenemia. Additionally, the vaccine appears to be safe. The most common reaction—10% to 15%— is a local one consisting of a sore arm. In the controlled trials the frequency of side effects in the recipients of the placebo has been as common as in vaccine recipients.

The vaccine has clearly been demonstrated to be safe and effective. A number of controversies remain: who should be vaccinated? Should populations be screened before and/or after vaccination? Who will pay for the vaccine? The target populations are those with a high frequency of B markers (Table 2). Because of the high cost of the vaccine—approximately $100.00 cost to the pharmacy—many institutions are currently vaccinating only the highest risk categories of health care personnel. A more specific prioritizing of these personnel is given in Table 3. The utility of screening for immunity to hepatitis B prior to vaccination is a function of the frequency of B markers in a population and the relative cost of screening and vaccination.[13] For example, it would be cost-effective in a homosexual population to screen prior to vaccination. The cost of screening with anti-HBs would be far outweighed by the cost saved in not vaccinating the 80% of the population who would be anti-HBs positive. The cost of the hepatitis B vaccine needs to be considered in relation to the cost of previously available passive immunity offered hepatitis B immune globulin. The issue of who will p for the vaccine is a very complicated societal iss beyond the scope of this manuscript.

Because this is a new vaccine, a number of unknow remain. The duration of protection of the vaccine is n clear. Preliminary evidence suggests that it may effective for five years.[14] Based on earlier vaccines the is concern about the occurrence of serious but lo frequency problems. One case of Guillain-Bar syndrome has been reported, but based on the baseli incidence in the U. S. population, one case would expected in the number of individuals who have bee vaccinated. The greatest concern recently has focus on the issue of an extraneous agent. Can the acquir immune deficiency syndrome be transmitted by th vaccine? Until the cause of this syndrome is delineat this question will not be answered with certaint However, the redundance of inactivation steps in th production of the vaccine would seem sufficient eliminate infectivity of a viral agent.[15]

The hepatitis B vaccine has been demonstrated to safe and effective. All health care personnel need consider vaccination for themselves. Furthermore, physicians, we need to offer the vaccine to selected hi risk patients.

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The Evolving Control of Medical Care

There is a battle raging over who will control medical care delivery. Hospitals (profit and nonprofit) and industry are vying for control of physician services directly and indirectly by controlling payment mechanisms.

Hospitals, even though they are largely responsible for the rise in health care costs, are attempting to take a controlling position in future health care cost decisions. This is an aggressive stance by an aggressive industry trying to preserve their "turf." They perceive that their best defense is an aggressive offense. By extending their tentacles throughout the community in the guise of public service (i.e., public health seminars, satellite clinics, urgent care centers, helicopter-ambulance services, etc.), and at the same time influencing local and national legislative bodies, they are attempting to be the center of medical care delivery. "The Hospital" having the high technology and multi-level managerial expertise, plan to market their wares to industry in order to produce cost-effective health care delivery systems. Whether the delivery system will be a prepaid Health Maintenance Organization, or a Preferred Provider Organization, or an Independent Physician Association delivery system is unclear, but may encompass all three or more modes of organization.

Industry, the second major force in health care matters, is only beginning to exert a strong influence in this same sphere. They have finally recognized that it is not physician income, but uncontrolled hospital costs, that has caused health care to rise well beyond the consumer price index. As such, industry sees the villians as "The Hospital" and is now proposing, nationally and locally, limits on hospital-per-day charges and a limit on the number of hospital beds per population. They are also looking at various kinds of alternative provider groups in order to give their employees quality medical care at an "affordable price." Thus, industry sees itself as the major controlling influence in health care matters, for they feel they have to pay the bill, and therefore should have a strong voice in how their money is spent.

Where do we as physicians fit into the scheme? I'm afraid we are just "clogs" in an overall plan and as such will have limited input into the "system." Most physicians do not appear eager to change the status quo, even if a change would forestall ultimate plans of hospital and industry. They perceive a move towards reconciliation as retreat, and as such would rather go down fighting than help the system adjust to the new game plan. Although we still are the center of health care delivery, this role will be lifted off our shoulders for we have failed to control the giant that has grown up around us. Physicians have watched hospitals grow, have served on their boards without exerting the kind of leadership needed to "regulate the industry." Rightly or wrongly, we have been used and abused and continue to be manipulated in the guise of public interest. For instance, I just received a letter asking if I thought a local hospital giant should hire an expert in gerontology (another full-time physician), to their staff. The letter was signed by four local primary care physicians who are quite knowledgeable about health care matters. Hospitals are becoming more independent because of their enlarging full-time medical staffs, which can be used to attract patients directly to their facilities. They thus can bypass those of us still in a position to influence medical care delivery.

Although physicians continue to feel comfortable within hospital structures for a variety of reasons which are obvious, it may very well be that physicians will have to form a new alliance with industry to help combat the potent force that hospitals are exerting. Although at first blush such an alliance would seem repugnant, in fact it may be the last resort physicians have to exert an influence over future control of the health care delivery system. Efforts in this direction are presently being undertaken by some farsighted members of our medical community. They should have our support.

Marshall B. Block, M.D.
Editor

Adding Another Dimension to Medical Education:
A Progress Report

One of the most challenging aspects of designing a superior educational experience for medical students who will be our nation's future physicians is the allocation of time for "pure science" teaching and the allocation of time for training in the "broader aspects" of patient care. By broader aspects of patient care we mean the psychological, social, philosophical, and ethical spheres. Physicians must be conversant in these spheres in order to be responsive to the needs of their patients.

Almost ten years ago the College of Medicine introduced a required course, called Human Behavior and Development (HB&D), into the medical school curriculum to provide a forum for the teaching of this material. In the same way that the traditional basic sciences serve as the background for understanding the scientific aspects of clinical medicine, HB&D serves as the basic science for understanding the psychosocial and emotional aspects of clinical medicine, as well as the ethical and legal issues in medicine. HB&D starts in the middle of the students' first year and continues through the middle of the second year. Two course coordinators, one an obstetrician/gynecologist and one a psychologist, are responsible for all aspects of the course. There are two-hour sessions twice weekly, amounting to a total of 140 hours of curriculum time.

The course is designed to provide the students with thought-provoking, often emotionally-charged situations that arise out of the day-to-day practice of medicine. For example, there are sessions on dealing with parents who have a malformed or retarded child, or a family with a chronically ill child who has no hope for cure. Frank and open discussions relating to abortion, alcoholism, drug addiction, rape and sexual abuse are held. Other sessions deal with how to take a sexual history and recognize problems that patients have in this sphere of their lives, how to care for chronically ill patients and how to care for the dying patient. In addition to College of Medicine faculty, a wide range of resource people are invited into the classroom including among others, attorneys, religious leaders, social workers, psychologists, and police officers. Presentation of the topic may involve role playing, panel discussions, patient interviews, videotapes or films, but always allows time for discussion among the students, coordinators, and resource people for that session.

Four years ago, in order to allow students to pursue a topic that particularly interested them in greater depth, HB&D "projects" were added as a course requirement. During the first half of the course students select a topic which is related to the course and submit a project proposal which must be approved by the course coordinators. Students may work together but each must carry responsibility for an identified portion of the project. Projects based on library research or field research are the most common, and the final project report must be 8 to 15 typewritten pages. A copy of all the project reports are made available in the library.

There are some superb outgrowths of these projects which have been of great value to the community. One student was so interested in his project on the Sudden Infant Death Syndrome that he became the prime mover in establishing a city-wide Sudden Infant Death Syndrome support group which, four years later, continues to thrive and is now solidly entrenched in the community. Other students have interviewed physicians about their use of acupuncture, techniques of pain management, biofeedback, and holistic medicine. Two students worked to develop a perinatal care clinic for Spanish-speaking women, another student put together a report describing the services available in Tucson to families with a retarded person in their household. Other topics covered have been hospice care of the terminally ill, coping with acquired blindness, herbal medicine, the use of hypnosis, the problem of elderly abuse, the historic and modern role of plants in medicine, genital herpes and the need for counseling, a review of the current knowledge about anorexia nervosa and bulimia, psychosocial problems in epilepsy, neonatal crises, resources for home care for the elderly, and the options in long-term care for the elderly.

The innovativeness and breadth of the topics covered by the projects wa unexpected and highly gratifying. Mo students expend considerable effort o their projects and the reports are of high quality. The information contain in the reports is often very valuable a several of the reports have been distributed to students in succeeding classes as the primary reading materia for a particular topic. The coordinato feel strongly that allowing medical students the freedom to make choice based purely on their own medical interests has paid great dividends, bot in the students' learning experiences and in value to the community.

This ability to work independently and to research a topic in depth will serve the students well as they contin to pursue their education after completing their formal training. It is, essentially, the way in which physicia stay current when they are in practice

Shirley Nickols Fahey, Ph.D.
Coordinator, Human Behavior
and Development

Herbert E. Pollock, M.D.
Coordinator, Human Behavior
and Development

Louis J. Kettel, M.D.
Dean, College of Medicine

Correspondence

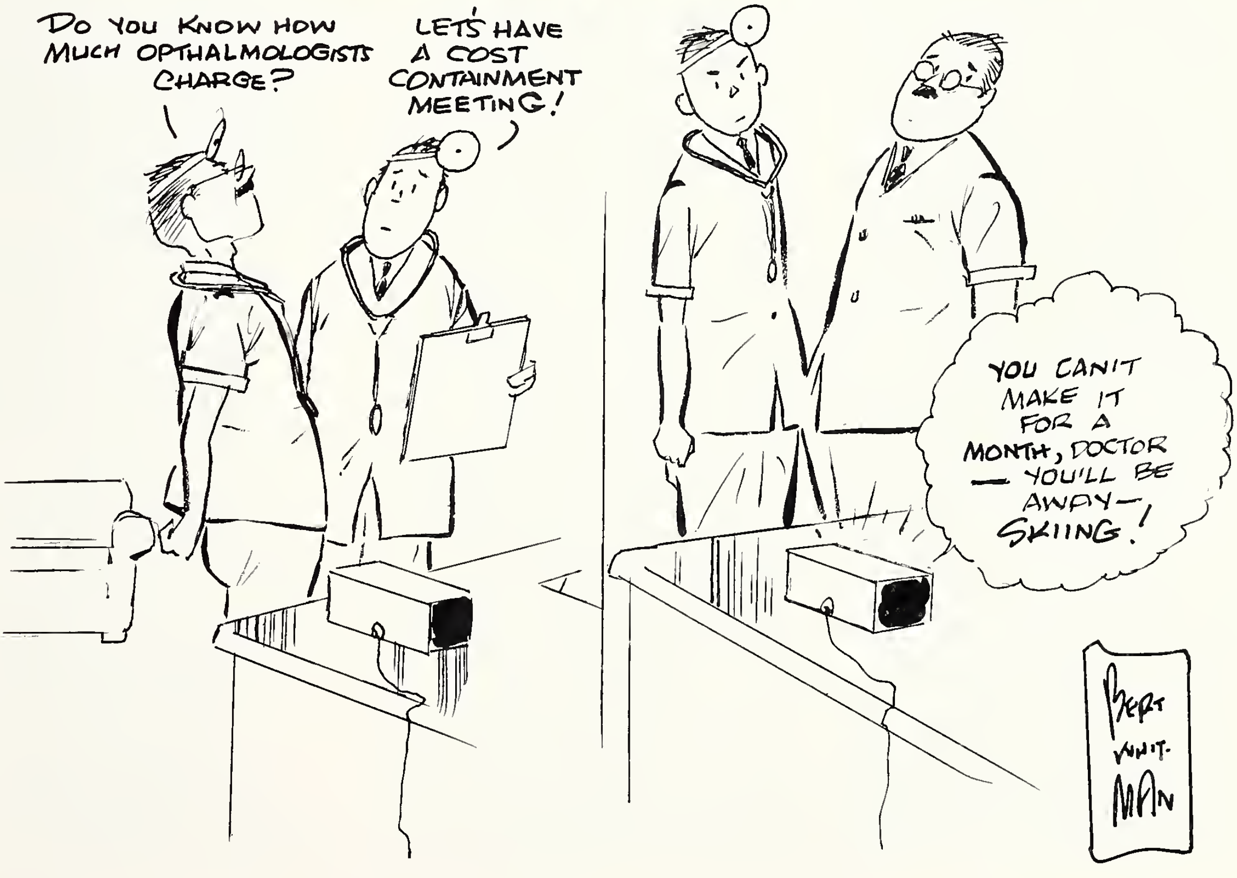
hat are We Doing urselves?”

or—

here is no question that the gant, supercilious, and annoyed endant physician can defeat the best rts of the most skilled defense rney. In spite of a solid defense on t grounds, some doctors continue ritate everyone in the courtroom ept the plaintiff’s attorney, who is pily egging him on. With inward ans, the defense team watches him et or ignore all directions to make a better witness, and play into the ds of a lawyer who has just hit the pot.

ometimes the expert who consults the defense, pontificates with the t wisdom of hindsight. It is asionally little short of amazing how “conspiracy of silence” has changed into a chorus of “J’Accuse.” The carrier must then depend on this advice to determine the advisability of settling. The consultant with the autopsy protocol in front of him suddenly becomes totally enlightened as to how the patient should have been treated. This applies also to the expert for the plaintiff who is completely convinced that, in his hands, things would have been different. We at times are lending ourselves admirably to the proposition that the reason people die is not that they had a disease and didn’t respond to treatment, but that they had the wrong doctor. No longer does infection, degeneration and neoplasia do us in, it’s doctors who do us in. In many instances we seem to be so intent on not covering up, we are exposing things that aren’t there.

Paul B. Jarrett, M.D.
Phoenix



CONFLICTS in Medicine

DO YOU KNOW HOW MUCH OPTHALMOLOGISTS CHARGE?
LET'S HAVE A COST CONTAINMENT MEETING!
YOU CAN'T MAKE IT FOR A MONTH, DOCTOR — YOU'LL BE AWAY — SKIING!
BERT WHIT-MAN

Briefly Noted

Editor
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Sydney Salmon, M.D.
Lawrence Stern, M.D.

Managing Editor
Bruce E. Robinson

Editorial Assistant
Joan M. Alexander

William E. Berkley, M.D., Scottsdale, has been named a candidate for the Malcolm Groh Award for the U.S.A.F. Flight Surgeon of the Year. Dr. Berkley is an emergency medicine physician at Scottsdale Memorial Hospital and is the national candidate for the Air National Guard. He is currently chief of flight medicine for the Tucson-based 162nd Tactical Fighter Training Group. In addition to his M.D. degree, Dr. Berkley holds a doctorate in veterinary medicine.

Donald K. Buffmire, M.D., Phoenix, has been elected chairman of the Board of Trustees of Blood Systems, Inc. A member of the board since 1955, Dr. Buffmire also serves as President of the Flinn Foundation of Phoenix. Other Phoenix physician members serving on the Blood Systems board are, **Robert A. Brooks, M.D., George H. Mertz, M.D.,** and **Melvyn C. Rothman, M.D.**

Vincent A. Fulginiti, M.D., head of pediatrics at the Arizona Health Sciences Center, has been appointed editor of the American Journal of Diseases of Children. The editorship represents a 10-year term, renewable every two years. **James J. Corrigan, Jr., M.D.**, also on the AHSC faculty, serves as associate editor of the journal, one of nine specialty publications of the American Medical Association.

James E. Gerace, M.D., Phoenix, has been named chief of staff of Phoenix Memorial Hospital. Other members of the 1983-1984 medical executive committee are: **Leon A. Rigberg, M.D.**, vice chief of staff, and **Stephen S. Gulesserian**, secretary-treasurer. Elected members-at-large were: **Oscar A. Hardin, M.D.**, obstetrics and gynecology; **Warren H. Heller, M.D.**, ophthalmology, **Jose G. Lopez, M.D.**, family practice; **Bruce A. Mallin, M.D.**, orthopedic surgery; **Donald E. Paxton, M.D.,** internal medicine; **Arthur L. Pelberg, M.D.**, internal medicine; and **Bernard Sunshine, M.D.**, urology.

Manuel Ma. Guerrero, III, M.D., Casa Grande, has written an article, "Advice to the New Emergency Physician," which was published in the January 30 issue of *Emergency Medicine*. The article offers guidelines for briefing beginning emergency room physicians in such important techniques as getting along with patients, dealing with hostility, etc. Dr. Guerrero has received a number of requests for reprints fron all parts of the United States as well a from Mexico and Europe.

Jacob Shapiro, M.D., Tempe, serves as president of the new East Valley Obstetrics and Gynecological Society. Dr. Shapiro helped organize the grou which was formed earlier this year. Other officers include **Wilson T. Shill, M.D.**, Tempe, president-elect; **Theodore Giese, M.D.**. Mesa, vice president; **Salvatore Abate, M.D.,** Mes secretary; and **Richard Lott, M.D.,** Mesa, treasurer.

William White, M.D., Phoenix, spok on worldwide pituitary research at a recent public meeting of the Arizona chapter of the Brain-Pituitary Foundation.

Rex Peterson, M.D., Phoenix, was elected president of the American Society for Aesthetic Plastic Surgery during the recent 16th annual meeting in Los Angeles. Dr. Peterson is a past president of the American Society of Plastic and Reconstructive Surgeons an was awarded that organization's highe honor in 1982.

Wallace A. Reed, M.D., Phoenix, wil serve as the first president of the recently organized Arizona Free-Standing Surgical Center Association. Other officers are **Allan Clemenger, M.D.**, vice president, and **Thomas H. Ross, M.D.**, treasurer.

Maricopa

Charles Bayse, M.D.
Family Practice
6036 North Nineteenth Avenue,
Phoenix
Stanford University—1959
William C. Bonfield, M.D.
Psychiatry
525 North Eighteenth Street,
Phoenix
Northwestern University—1971
Thomas Bower, M.D.
Anesthesiology
4442 East Camelback, No. 161,
Phoenix
Tulane University—1968
Bradley C. Buckhout, M.D.
3201 West Peoria, Phoenix
University of Toledo
Medical College—1979
Randy V. Campo, M.D.
Ophthalmology
525 North Eighteenth Street,
Phoenix
Jefferson Medical College—1977

omas Hartley, M.D., Phoenix, explains "The Cause and Effect of Allergic Disease" the March Health Talk forum.

Cable Television Schedule
May - Summer Travel Tips - Allen B. Moore, M.D.
June - Perinatology - H. Belton P. Meyer, M.D. and Daniel F. O'Keeffe, M.D.
July - Desert Survival - George Brown, M.D.

American Cable (Channel 13) - Saturday, 12:30 p.m.
Western Cablevision (Channel 2) - Monday, 4:30 p.m.
Storer Cable (Channel 106 - Monday, Wednesday, 5:00 p.m., Phoenix/Glendale
Storer Cable (Channel 2) - Friday, 3:00 p.m., Mesa/Ahwatukee

Marco R. DeSimone, M.D.
Emergency Medicine
2535 North McAllister, Tempe
University of Arizona—1980
Janelle A. Y. Engel, M.D.
Otorhinolaryngology
564 West Ninth Place, Mesa
University of Southern California—1975
Ernesto M. Gomez, M.D.
Obstetrics and Gynecology
039 North Country Club Drive, Mesa
University of Colorado—1977
Gary W. Hall, M.D.
Ophthalmology
4538 North 40th Street, Phoenix
University of Cincinnati—1978
Charles W. Hohler, M.D.
Obstetrics and Gynecology
350 West Thomas Road, Phoenix
Tufts University—1971
Douglas Jensen, M.D.
Internal Medicine/Cardiology
4616 North 51st Avenue, Suite 210, Phoenix
University of Missouri—1973
Lawrence I. Liebmann, M.D.
Internal Medicine
4614 East Shea Boulevard, Phoenix
Free University of Brussels—1978

Alan Manas, M.D.
Ophthalmology
13200 North 103rd Avenue, Sun City
Tufts University—1967
Linda R. Mishlove, M.D.
Family Practice
10211 North 32nd Street, Phoenix
University of Wisconsin—1977
Paula Nadell, M.D.
Obstetrics and Gynecology
3411 North Fifth Avenue, Phoenix
Medical College of Pennsylvania—1972
Christopher Nahm, M.D.
Obstetrics and Gynecology
4700 North 51st Avenue, Phoenix
University of Michigan—1978
Martin H. Rubin, M.D.
Internal Medicine
2034 East Southern, Tempe
University of Illinois—1978
Alan C. Schwartz, M.D.
Emergency Medicine
6025 North 20th Avenue, Phoenix
Creighton University, Omaha, Nebraska—1975
Richard A. Shepard, M.D.
Anesthesiology
1666 East Extension Road, Mesa
University of Michigan—1970
Mark A. Shucker, M.D.
Internal Medicine
9200 North Third Street, Phoenix
Jefferson Medical College—1976
Ernest R. Simon, M.D.
Blood Banking Services and Hematology
6401 East Thomas Road, Scottsdale
Harvard University—1954
Dean Smith, M.D.
Anesthesiology
217 East Virginia, Phoenix
University of Arizona—1977
Lawrence Teitel, M.D.
Neurology
7351 East Osborn Road, No. 102, Scottsdale
Boston University—1975
Mark Wyse, M.D.
Family Practice
4319 North 32nd Street, Phoenix
University of Kentucky—1979

Pima

John T. Collins, M.D.
Plastic Surgery
4201 Larrea Lane, Tucson
Tufts University—1969
Richard P. Greenberg, M.D.
Neurology
4320 North Alvernon Way, Tucson
University of Bologna, Italy—1970
Janice R. L. Smith, M.D.
Diagnostic Radiology
5671 East Grant Road, Tucson
University of Colorado—1975

Yuma

Thomas N. Suciu, M.D.
Obstetrics and Gynecology
1975 West 24th Street, Yuma
University of North Carolina—1973

New Resident Member

James Nachbar, M.D.
General Surgery
3700 North Campbell, No. 502, Tucson
Washington University, St. Louis, Missouri—1980

New Service Member

A. O'Tayo Lalude, M.D.
Urology
Veterans Administration Medical Center, Prescott
University of Southern California—1975

Obituary

Daniel Bright, M.D.
August 5, 1917
January 3, 1983

"We Can Serve God Best By Working, To The End, For Humanity."

On January 3, 1983, an era of medicine ended in the Verde Valley when Daniel Bright, M.D., died of myelogenous leukemia in the Marcus J. Lawrence Memorial Hospital, the hospital that he served for so many years. He was 65 years old.

For two years, Dan Bright knew that he had leukemia and yet, he did not change his life-style. He continued in his dedication to his practice, his family, and the people of the Verde Valley. Shortly after Dan died his assistant of 12 years, Kay Kallsen, discovered scribbled in his handwriting on one of his prescription pads the phrase, "We can serve God best by working, to the end, for humanity." Dan lived by this creed, not for the last two years, but for a lifetime.

He was born in Clinton, Indiana and received his medical education at Indiana University School of Medicine. He did postgraduate study in pediatrics and radiology at Wayne County General Hospital and Children's Hospital in Detroit, Michigan. He came to the Verde Valley in February 1951. He practiced general medicine as well as pediatrics and radiology. He began the radiology section at the Cottonwood Hospital and was the sole radiologist there for many years. His dedication to his practice and his patients was unsurpassed. I recall the time when Dan made rounds at the hospital for seven years without missing a single day. He had little thought or desire for vacations. His recreation was his home, his family and his community. He served for 17 years as a member and president of the Board of Education of Mingus Union High School. School was dismissed on the day of his memorial service. The flag flew at halfmast and the high school newspaper "Spirit," ran the headline, "We'll miss you Dr. Bright."

Dan's obsession was quality medicine for the people of the Verde Valley and for Marcus J. Lawrence Memorial Hospital. He was unselfish in his devotion to this end and he encouraged any practitioner who sought to deliver excellence in medicine to the Verde Valley. If he felt the best care was not being delivered, he took it upon himself to correct the injustice.

In addition to Dan's passion for medicine, he had many other deep interests, most of them remaining close to home.

His devotion to his family occupied much of his time and interest. He shared the love of golf and birds with his wife, Pep. He was interested in activities of his children, daughter Heidi, sons Dan, Ken, Ron and Barry and his daughters-in-law Debby and Terri. His office was adorned with pictures of his children and in recent years stacked high on his desk were pictures of his grandchildren, Daniel, Steve, Kenny and Jerod. In addition to his interest in medicine and family, he was appointed to the first Clarkdale City Council after the town was incorporated and served for 15 years, including ten as Mayor of Clarkdale. The list of honors bestowed on Dan could go on and on. During WWII he served as a medical officer in the European theater attaining the rank of Major. He earned the bronze star and two battle stars. He headed a medical platoon which took part in the liberation of Nazi death camps. His college established a medical scholarship in his honor at the University of Arizona, earmarked for financial assistance to medical students desiring to practice in rural communities. In recognition of his devotion to Mingus Union High School and their athletics, the athletic field is appropriately named Bright Field. He led the way for the establishment of Dollars for Scholars, a program to provide financial assistance for high school students to pursue education beyond high school level. One of the highlights in his life was the year 1970 when he was named Man of the Year by the Verde Valley Chamber of Commerce.

Those of us who have known medicine in the Verde Valley for som years and have seen its growth and change can truly say that in January o 1983, a great era of medicine in the Verde Valley came to an end. The words Kay found scribbled on Dan's prescription blank "We can serve Go best by working, to the end, for humanity" was truly the motto of Dan and that era.

Pep Bright, Dan's children and grandchildren, his colleagues and patients, join me in saying, "Dr. Dan, we will miss you. The Verde Valley wil not be the same, but it is better because you were there."

Paul Schnur, M.D.

ArMA Reports

he minutes appearing in this section ave been condensed. A complete copy f them will be sent to any member equesting one.

AD HOC INDIGENT HEALTH CARE COMMITTEE

The Ad Hoc Indigent Health Care ommittee met on April 16.

The AHCCCS membership survey was scussed. It was suggested that an troductory paragraph be added ating that six months had passed since HCCCS was implemented and the urposed of the survey was to obtain riticisms and suggestions to improve e program.

Dr. Sarn explained how the quality eview committee of the federal overnment worked in evaluating the HCCCS program. The federal valuation team is going to return in a onth and will focus on the technical pects of the program. The team was npressed with the number of people eing served and the quality of that ervice.

It was agreed that the biggest roblem was the number of people not ligible for services (notch group) and n estimate was needed of the number f people in that group. Also nentioned were the number of omplaints MCAUTO has received and heir slowness in follow-up; a lack of olicy direction; as well as: ansportation problems; and ncounter form problems (in ubmitting medical records you do not ave the actual records byt have to get bstracts of them). Under Medicare you o not get paid if you do not fill out orms, but under AHCCCS payment for lling out forms is included in the apitated fee. There is a 5% to 10% nrollment error rate in some areas of ne stated and no visible solution with ne low level of income standards. The najor areas of discontentment are the ollowing administrative problems: 1) elephone problems; 2) no written esponses; 3) quality assurance aspect n some of the umbrella plans; 4) rievance procedures; 5) early diagnosis creening not implemented; 6) issue vith native Americans completely nworkable at this time.

Members were given copies of the rovider medical reviews findings onducted by the Deapartment of Health Services. They were requested o read these reports and at the next meeting the fairness of treatment would be discussed.

The committee was told that the Yavapai County Medical Society would introduce a resolution at the annual meeting which states that Yavapai County Medical Society would continue to provide laudable care; work for legislative changes in AHCCCS; and strive to help correct the inadequacies in the current AHCCCS program.

EXECUTIVE COMMITTEE

The Executive Committee met on April 22.

Dr. Michael Clement, the Assistant Director of the Division of Family Health of the Arizona Department of Health Services, appeared on behalf of Dr. James Sarn, to update the committee on various activities of the department. These included the successful passage of S.B. 1264 which established a perinatal program within the department, the phase-out of the Arizona Crippled Children's Hospital, and the latest developments regarding AHCCCS legislation. The possibility of Dr. Sarn leaving the department to take an appointment with the State Department was also briefly discussed.

Ron Krause and Bob Grams, the President and Vice President, respectively, of the Arizona Hospital Association, discussed at great length that association's proposal for a Hospital Cost Communication Plan which is being developed for the purpose of communicating to business and community leaders, legislators and the public the issues surrounding health care costs from the perspective of the health care industry. Participation of the Arizona Medical Association was discussed and requested in the following particulars: 1) in conducting a survey of physician attitudes toward cost issues of health care; 2) in conducting an education effort for physicians regarding an attempt to reach solutions to the problems; 3) in providing a practicing physician to participate on the committee which will steer the effort by ArHA; and 4) in providing financial support for this endeavor. After the ArHA representatives had excused themselves, the committee continued to discuss the matter and the proposals and requests made, following which it was moved and carried that the Arizona Medical Association continue its support of the Arizona Hospital Association.

It was moved and carried that the entire matter of participation and support of ArHA's Hospital Cost Communication Plan be referred to the Ad Hoc Committee on Hospital Services, requesting that the committee review and consider the same and make its recommendations to the Executive Committee prior to its meeting scheduled for May 20, 1983.

The committee reviewed the 4/6/83 request from BOMEX asking ArMA to provide assistance to the Department of Corrections during a period of severe budget limitations. Concern was expressed that this request might not correctly reflect the desires of the medical staff for the Department and it was moved and carried that ArMA staff make further inquiry of the physicians who actually provide the care at penal institutions within the state regarding need for assistance and return that information to the Executive Committee for further review.

The 3/31/83 invitation from the State of Arizona Board of Medical Examiners for participation in and attendance at meetings of BOMEX as well as the Joint Board of Medical and Osteopathic Examiners was reviewed by the committee and it was determined to place the latter on the agenda for review by the Board of Directors during its May 20, 1983 meeting.

The committee discussed the program to be held with the College of Medicine faculty following the tentatively planned October 29, 1983 Board of Directors' meeting in Tucson and topics which might be considered for presentation. It was moved and carried that Louis J. Kettel, M.D., Dean of the College of Medicine, be requested to develop a program which would encompass and tie together the following: organized medicine membership/manpower/teaching programs/cost containment.

It was moved and carried that the matter of considering jointly serving as the state PRO, if so selected, with the Arizona Osteopathic Medical Association be referred to the Board of Directors for its consideration.

AD HOC COMMITTEE ON HOSPITAL SERVICES

The Ad Hoc Committee on Hospital Services met on May 10, 1983.

The committee received the request of the Executive Committe to review the proposed hospital cost communications plan of the the Arizona Hospital Association and its request for ArMA's participaton.

There was a lengthy discussion during which the following concerns were presented: the problems addressed in the proposed ArHA plan, the problems industry feels it is facing and attempting to solve, and the affect of these issues and their outcome upon the medical profession but more importantly upon patient care. It was moved and carried to recommend to the Executive Committee that, after review and consideration, the Arizona Hospital Association's proposed hospital cost communications plan and its request for ArMA participation be rejected; and that ArMA continue to develop its own program for controlling health care costs, encouraging liaison with other groups pursuing the same goals without sacrificing patient care. Along these lines, the committee felt to be completely informed it should hear from a spokesman in industry.

It was moved and carried that the Speaker of the House be requested to allow the slide presenation developed by the Ad Hoc Committee on Hospital Services be shown during a session of the House of Delegates on May 20 or 21.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

JUNE

6th Annual Summer Pediatric Conference Infectious Diseases and Trauma
June 10-12. Sedona, Arizona. Sponsor: College of Medicine University of Arizona. Contact: Office of Continuing Medical Education and Outreach. U. of A. Health Sciences Center, Tucson, AZ 85724.

Arizona Emergency Medicine Symposium
June 15-17. Ramada Townehouse, Phoenix. Sponsor: Arizona Emergency Medical Systems, Inc., and Maricopa Medical Center. Contact: L. Tamsky, M.D., Maricopa Medical Center, 2601 E. Roosevelt, Phoenix, Arizona 85008.

Advanced Cardiac Life Support Recertification/Provider
June 23-25. Phoenix. St. Joseph's Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

JULY

Coconino County Medical Society Summer Medical Seminar
July 22-23. Little America Motor Hotel, Flagstaff, Arizona. Sponsor: Coconino County Medical Society, U. of A. College of Medicine. Contact: Nathan A. Benson, M.D., P.O. Box 392, Flagstaff, Arizona. Approved for 13 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
July 27-29. Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

AUGUST

10th Annual Arizona Conference on Rural Health
August 5-6. Embry-Riddle Aeronautical University, Prescott, Arizona. Sponsor: ArMA, Arizona Nurses' Assn., Phoenix Indian Health Service, Region IX—National Health Service Service Corps. Contact: Christy Snow, Coordinator, Rural Health Office, 3131 E. 2nd Street, Tucson, Arizona 85716. Approved for hour per hour Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
August 24-26. Phoenix. Sponsor: ACLS, Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd. Phoenix, Arizona. Provider course approved for 21 hours of Category 1 cre and Recertification approved for 13 hour

SUMMER CME CRUISE/CONFERENCES ON LEGAL-MEDICAL ISSUES

Alaskan, Caribbean, Mediterranean. Ten and fourteen days in July and August. Approved for 24 CME Category 1 credits (AMA/PRA). Distinguished professors. Fly round-trip FREE on Caribbean and Alaskan cruises. Excellent group fare on finest ships. Registration limited. Scheduled prior to 12/31/80—Tax-deductible under 1976 Tax Reform Act. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Rcbert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Children's Hospital,
2nd Tues.— Maricopa Medical Center,
3rd Tues.—Phoenix Children's Hospital,
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoneix, ARizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000 Phoenix, AZ 85064. Contact: Ravi Koopot, M.D.

Clinical Conference Cardiovascular Medicine
Third Tues., 5:15 p.m., second floor classroom

ARIZONA STATE HOSPITAL

00 E. Van Buren, Phoenix, AZ 85008.
ontact: Martin B. Kassell, M.D.
S.H. Psychiatric Grand Rounds
d Wed., 1:00-2:00 p.m., J-6 Conf. Rm.,
ontact: Dr. Conger & Staff
inical-Pathological Conference
d Wed., 1:30-2:30 p.m. General Services
dg., Conf. Rm.
edical Grand Rounds
n Wed., 1:00-2:00 p.m., Medical Bldg.
onf. Rm.

BARROW NEUROLOGICAL INSTITUTE

edical Education
rrow Neurological Institute of St.
seph's Hospital and Medical Center, 350
. Thomas Rd., Phoenix, AZ 85013.
ponsor: St Joseph's Hospital & Medical
enter. Contact: John R. Green, M.D.
pproved for 1 hour Category 1 credit.
eurology Teaching Conference
esdays, 8:30-9:30 a.m., Eighth Floor
onf. Room.
eurosurgical Morbidity Conference
ednesdays, 8:15-9:15 a.m., on first and
ird and fifth, Eighth Floor Conference
oom.
euro-Ophthalmology Conference
ondays, 7:30 a.m. in 8th floor neurology
nference room.
pinal Injury Conference
ednesdays, 8:15-9:15 a.m., on second and
urth weeks, in Neuropathology Conf.
n.—a multidisciplinary review of
mission by neurosurgeons, orthopedists,
d rehabilitation specialists.
europathology of Gross
pecimens Conference
hursday, 7:30-8:30 a.m. in the Morgue.
eurology-Neurosurgical
idays, 8-9 a.m., First Floor Conf. Rm.
europathology or
euroradiology Conferences
iday, 9 a.m., Neuropathology in
europathology Conference Rm.,
euroradiology in First Floor Conf. Rm.
eurorehabilitation Conference
esdays, noon, 8th Floor Conference Rm.
eurosurgical Journal Club
aturdays, 9-11 a.m. in Eighth Floor
onference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

0401 Thunderbird Boulevard, Sun City, AZ
5372. Contact: Martha R. Newby, ED.D.,
rector of Education.

edical Department Continuing
edical Education
h Wednesday, 12 Noon, C119. May, July,
ept. & Nov.
umor Board
ast Thursday of the month, 12 Noon,
duc. Center Classroom I & II, May, July,
ept, & Nov.
urgical Department CME
h Friday, 7 a.m., Educ. Center
lassrooms I & II. Contact: Brian
pdegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018.
Sponsor: Camelback Hospital. Contact:
Howard Gray, M.D. and Robert Meyer, M.D.
Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona,
Contact: L.A. Rosati, M.D. Approved for
Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West
End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet
Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande
Rm.
Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona
86016. Contact: Medical Staff Secretary for
additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712.
Contact: Eric G. Ramsay, M.D. Approved
for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept.
and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268,
Flagstaff, AZ 86002. Contact: B. C.
Hirschberg, M.D., CME Program Clinical
Conference. Approved for Category 1
credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m.,
Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ
85006. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m.,
Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family
Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m.,
Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family
Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m.,
Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00
p.m., T-8 Conference Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf.
Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m.,
Family Practice Center.
Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m.,
Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m.,
Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family
Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8
Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m.,
Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m.,
Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf.
Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713.
Contact: Eric C. Ramsay, M.D., Approved
for Category 1 credit.
Surgical Conference
Weekly, Monday 8:00 a.m., Contact:
R. Fischer, M.D.
Medical Conference
Weekly, Monday, 12:30 p.m., Contact:
Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact:
Jay Fleishman, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact:
Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008
Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m.,
Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical
Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008.
Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Provlem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..

Review of GYN Pathology Slides
Weekly, Tuesday, 4 p.m.

Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.

Patholgy Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.

Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7 a.m.

OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.

Surgery
Weekly, Wednesday, 7 a.m.

Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.

Psychiatry Staff
1st Wednesday, 11 a.m.

Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.

Medicine Cardiology
1st Wednesday, 12 Noon.

Medicine Hematology
2nd Wednesday, 12 Noon.

Medicine Mortality
3rd Wednesday, 12 Noon.

Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.

Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.

Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.

Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.

Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..

Anesthes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7 :30 a.m.

Anesthesiology Journal Club
4th Thursday, 8 a.m.

Ambulatory Pediatarics
Weekly, Thursday, 8 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8 a.m.

Burn Mortality Conference
4th Thursday, 8 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.

Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.

OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Friday, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.

Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12 :30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm.
Weekly, Wednesday, 7:30-8:30 a.m.

Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference R
A, Contact: N. Wendell Todd, M.D.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved
Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm
Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm.
Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 8525
Contact: W. S. Williams, M.D., Approved
Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.

Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.

diatric Rounds
eekly, Monday, Wed. & Friday, 10:30 a.m., diatric Department.
diatric Grand Rounds
Tuesday, 7:30-8:30 a.m., Contact: Kipp Charlton, M.D.
G Conference
eekly, Tuesday, 12:30 p.m., Pediatric partment.
edical Grand Rounds
eekly, Wednesday, 8 a.m., 1st Floor Conf. om.
siting Professor Formal Presentation
eekly, Thursday, 8 a.m., PIMC.
siting Professor Informal Presentation
eekly, Thursday, 9:30 a.m., 1st floor Conf. n.
siting Professor Formal Presentation
eekly, Thursday, 12:30 p.m., PIMC.
phrology Conference
eekly, Fridays, 12:30 p.m., Pediatric partment.

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

0 N. Wilmot Road, Tucson, AZ. Contact: ic G. Ramsay, M.D. Approved for ategory 1 credit.
mily Practice Department Meeting
d Tuesday, 12 p.m., Contact: m. Monteforte.
phthalmology Morbidity/Mortality Conf.
h Tuesday, 12:15 p.m., Contact: Kim wards.
urrent Concepts in Medicine
eekly, Tuesday, 12 p.m., Auditorium.
ematology-Oncology Conference
st Wednesday, 12:15-1:15 p.m., Contact: Salmon, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

25 North 18th Street, Phoenix, AZ. ontact: Gerald L. Hansbro, M.D.

ardiac Conference
eekly, Monday, 12:15 p.m., Auditorium.
hest Conference
th Monday, 12:15 p.m., Phillips uditorium.
urgery Conference
st Tuesday, 12:15 p.m., Auditorium.
mergency Medicine Conference
st Wednesday, 12:15 p.m., Auditorium.
ardiovascular-Thoracic Record Review
rd Wednesday, 12:15 p.m., Auditorium.
ulmonary Case Conferences
st Thursday, 7:30 a.m., Phillips uditorium.
sychiatry Conference
rd Thursday, 7 a.m., Auditorium.
ombined Medical General Practice onference
st Friday, 12:15 p.m., Auditorium.
oxicology Grand Rounds
nd Friday, 7:30 a.m., Auditorium.
phthalmology Conference
st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 35703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

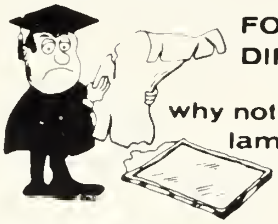
5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Perinatal Conference
2nd Monday, 7:30 p.m., Contact: J. Lohman, M.D.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Surgical Dept. Conference
2nd Monday, 12 Noon, Contact: C. Peter Crowe, Jr., M.D.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.



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References: **1.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **2.** Kramer MJ, Mauriz YR, Robertson TL, Timmes MD: Morphological studies on the effect of subinhibitory and inhibitory doses of sulfamethoxazole-trimethoprim combination o *Escherichia coli*. Presented at the 12th International Congress of Chemotherapy, Fl ence, Italy, Jul 19-24, 1981. **3.** Spicehandler J *et al*: *Rev Infect Dis* 4:562-565, Mar- 1982. **4.** Stamey TA: *Pathogenesis and Treatment of Urinary Tract Infections*. Baltimore, Williams & Wilkins, 1980, p. 13. **5.** Ronald AR: *Clin Ther* 3:176-189, Mar 1980 **6.** Cooper J, Brumfitt W, Hamilton-Miller JMT: *J Antimicrob Chemother* 6:231-239, 1980. **7.** Gower PE, Tasker PRW: *Br Med J* 1:684-686, Mar 20, 1976. **8.** Cosgrove Morrow JW: *J Urol* 111:670-672, May 1974. **9.** Iravani A *et al*: *Antimicrob Agents Chemother* 19:598-604, Apr 1981. **10.** Schaeffer AJ, Flynn S, Jones J: *J Urol* 125:82 827, Jun 1981. **11.** Rous SN: *J Urol* 125:228-229, Feb 1981. **12.** BAC-DATA Medical Information Systems, Inc., Bacteriologic Reports, Winter Series, 1976-82.

Bactrim™ DS
(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary which follows:
Indications and Usage: For the treatment of urinary tract infections due to sus ceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Entero bacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommende that initial episodes of uncomplicated urinary tract infections be treated with single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials especially in these urinary tract infections.
For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offe an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim not indicated for prophylactic or prolonged administration in otitis media at a age.
For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in phys cian's judgment it offers an advantage over a single antimicrobial agent.
For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.
Also for the treatment of documented *Pneumocystis carinii* pneumonitis.
Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nurs mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.
Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, hepatocellular necrosis, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reporte as well as an increased incidence of thrombopenia with purpura in elderly patients o certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice ma be early signs of serious blood disorders. Frequent CBC's are recommended; therap should be discontinued if a significantly reduced count of any formed blood element noted.
Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urina yses, with careful microscopic examination, and renal function tests, particularly whe there is impaired renal function. Bactrim may prolong prothrombin time in those rece ing warfarin; reassess coagulation time when administering Bactrim to these patients *Pregnancy:* Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy onl if potential benefits justify the potential risk to the fetus.
Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplas tic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necro ysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reaction periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia an allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, hepatocellular necrosis, diarrhea, pseudomembranous co tis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents ma exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies
Dosage: *Not recommended for infants less than two months of age.*
URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:
Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.
Children: Recommended dosage for children with urinary tract infections or acute otit media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.
For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/mi use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.
ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:
Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.
PNEUMOCYSTIS CARINII PNEUMONITIS:
Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.
Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 20. *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per tea spoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

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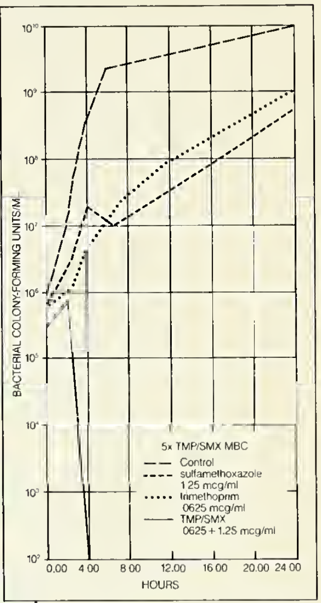
	Escherichia coli	*Klebsiella pneumoniae*	*Proteus mirabilis*	*Proteus vulgaris*	*Proteus sp.*	*Enterobacter sp.*	*Enterobacter aerogenes*	*Enterobacter cloacae*
BACTRIM	**96%** 328,598	**89%** 63,551	**93%** 62,691	**84%** 4174	**91%** 4381	**88%** 1736	**96%** 7326	**92%** 11,856
ampicillin	72% 345,209	5% 65,466	85% 67,338	16% 4381	70% 4402	10% 1775	9% 7759	11% 12,091
cephalexin†	81% 343,339	85% 67,031	92% 67,027	16% 4398	80% 4365	22% 1834	13% 7571	12% 11,846
nitrofurantoin	97% 307,785	65% 61,162	7% 59,775	13% 3848	14% 3059	67% 1707	60% 7109	67% 10,830

†Analogous to cephalothin, the primary antibiotic disc used in testing.
Source: The Bacteriologic Report, BAC-DATA Medical Information Systems, Inc., Winter Series, 1981-82.
Numbers under percentages refer to the projected number of isolates tested.

RAPID *IN VITRO* DESTRUCTION OF *E. COLI**



Kill curve kinetics of Bactrim and its individual components against *E. coli in vitro.*[1]

The bactericidal action of Bactrim has been demonstrated *in vitro* on laboratory strains of *E. coli*[1,2] and on clinical isolates of *E. coli, Klebsiella-Enterobacter, Proteus mirabilis* and *Morganella morganii*[3]—the most common causative organisms of urinary tract infections.[4] More than 100 published studies attest to the efficacy of Bactrim in recurrent urinary tract infections due to these organisms.[5] In comparative studies with other antimicrobials, Bactrim has consistently demonstrated unsurpassed efficacy during therapy.[6-11]

Resistance to Bactrim develops more slowly than to either of its components alone *in vitro.** Among urinary tract isolates, resistance has rarely emerged in susceptible strains.[5,12] Bactrim is contraindicated in pregnancy at term, during lactation, in infants less than two months old and in documented megaloblastic anemia due to folate deficiency.

Initial episodes of uncomplicated urinary infections should be treated with a single-agent antimicrobial.

Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

b.i.d. *for recurrent urinary tract infections*

**In vitro* data do not necessarily predict clinical results.

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See next page for references and a summary of product information.

Motrin®
ibuprofen, Upjohn
600 mg Tablets

Upjohn

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J-9043-4 July 1981

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3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
st, 3rd, & 5th Thursday, 12-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER
(U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

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Anesthesiology Board Review Conference
2nd & 4th Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4-5 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4-5 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4-6 p.m., AHSC, Contact: Dr. J. Goldstone.

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Yet another benefit Valium affords is flexibility. Available in 2-mg, 5-mg and 10-mg scored tablets, Valium enables you to titrate dosage to individual patient needs. For the geriatric patient, a starting dosage of 2 to 2½ mg once or twice a day is recommended. And, for patients who forget or skip medication, you can prescribe Valrelease™ (diazepam/Roche) 15-mg slow-release capsules, knowing that Valrelease will assure all the benefits of Valium 5 mg *t.i.d.* with the convenience of once-a-day dosage.

Discontinuation of Valium (or Valrelease) is typically as smooth as its start in short-term therapy. However, Valium and Valrelease should be discontinued gradually after more extended treatment. As you diminish dosage, the built-in tapering action of Valium and Valrelease will help avoid rapidly recurring anxiety symptoms and symptoms of withdrawal, and will help ease the patient's transition to independent coping when therapeutic goals have been achieved.

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For a summary of product information, please turn the page. ROCHE®

Valium® (diazepam/Roche) ⒸIV Tablets
Valrelease™ (diazepam/Roche) ⒸIV slow-release Capsules
Injectable Valium® (diazepam/Roche) ⒸIV

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindications: Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

> *Usage in Pregnancy:* **Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

ORAL Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

INJECTABLE *To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly, taking at least one minute for each 5 mg (1 ml) given; do not use small veins,* i.e., *dorsum of hand or wrist, use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea, have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, *i.e.*, phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

INJECTABLE Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

Adverse Reactions: Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

INJECTABLE Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia.

In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

Dosage: Individualize for maximum beneficial effect.

ORAL *Adults:* Anxiety disorders, relief of symptoms of anxiety—Valium (diazepam/Roche) tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

Geriatric or debilitated patients: Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

Children: Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

INJECTABLE Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.)

For dosages in infants and children see below; have resuscitative facilities available.

I.M. use: by deep injection into the muscle.

I.V. use: inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., *dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children *administer I.V. slowly*; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M., in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

Management of Overdosage: Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

How Supplied:

ORAL Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

INJECTABLE Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.

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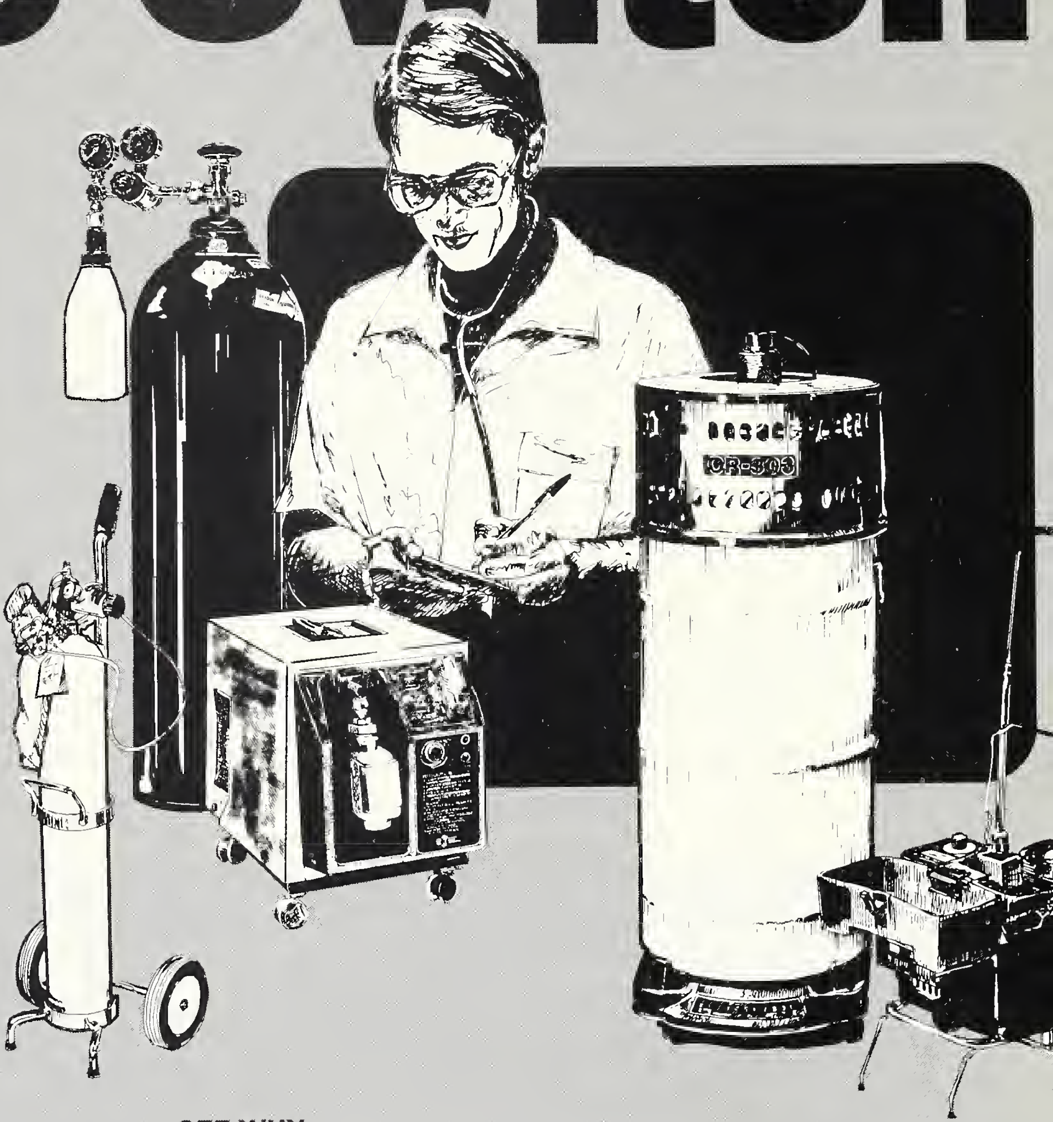

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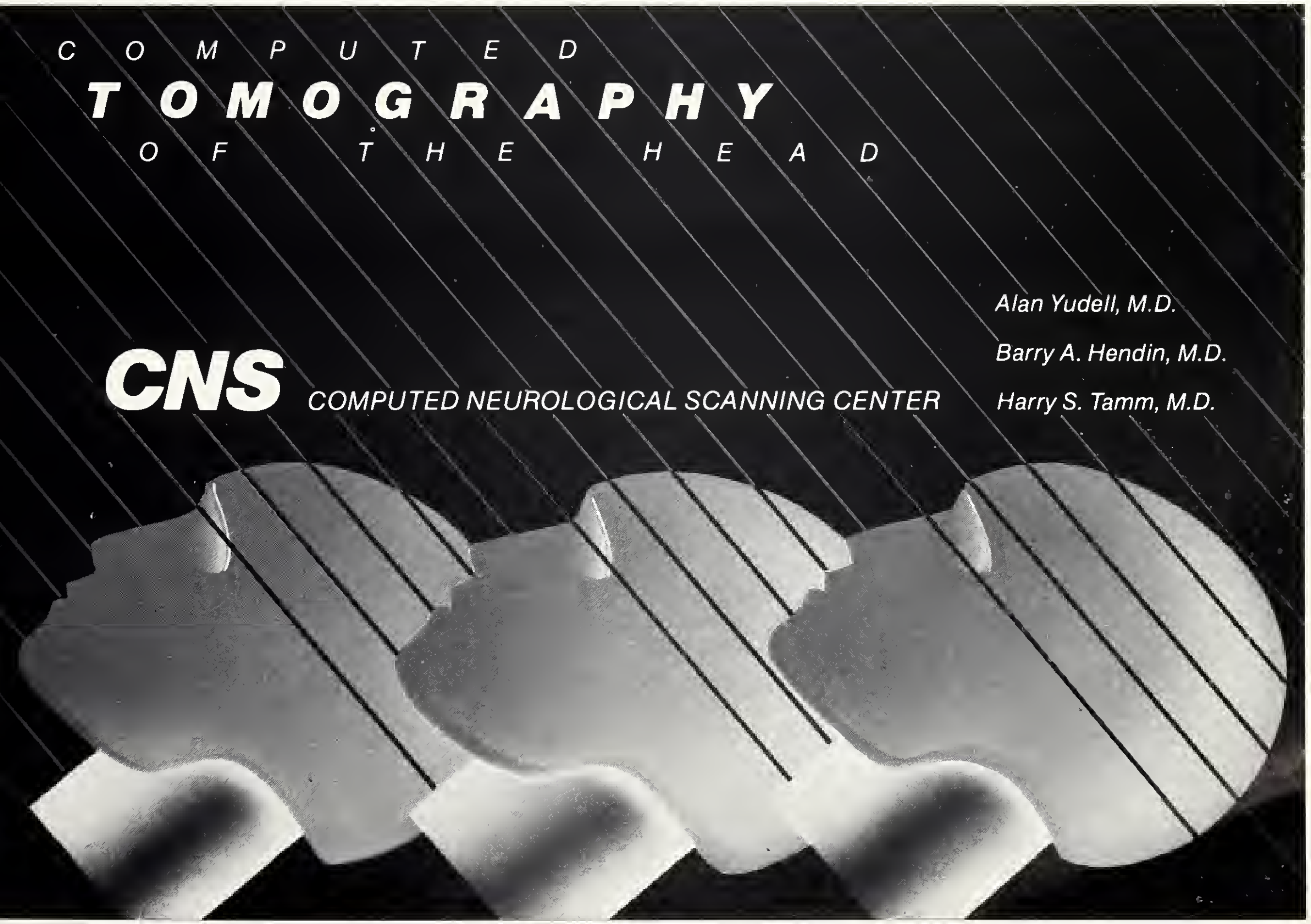

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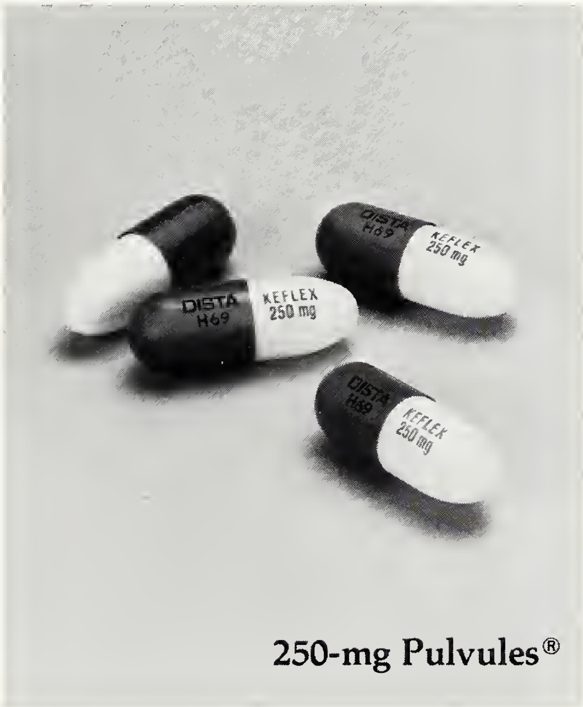

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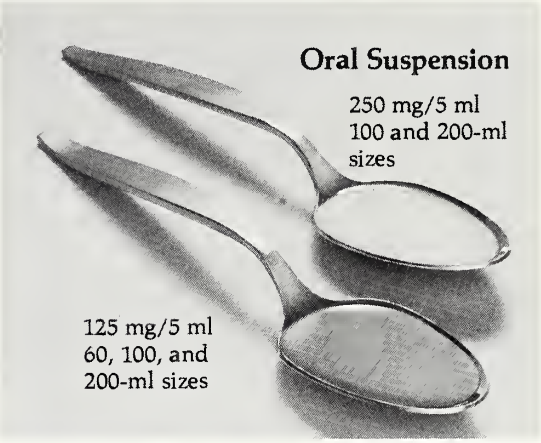

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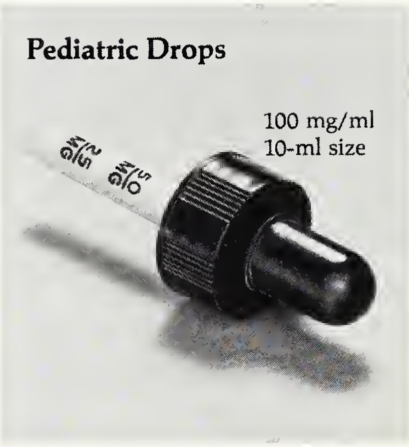

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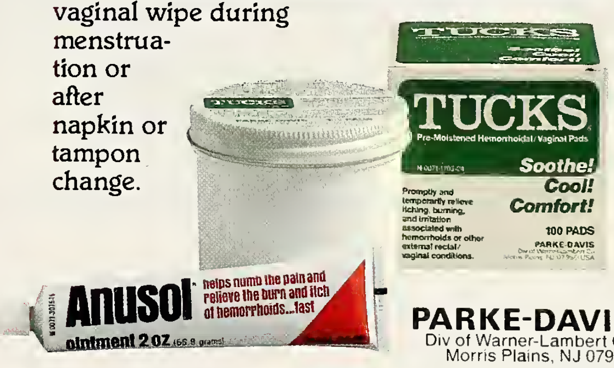
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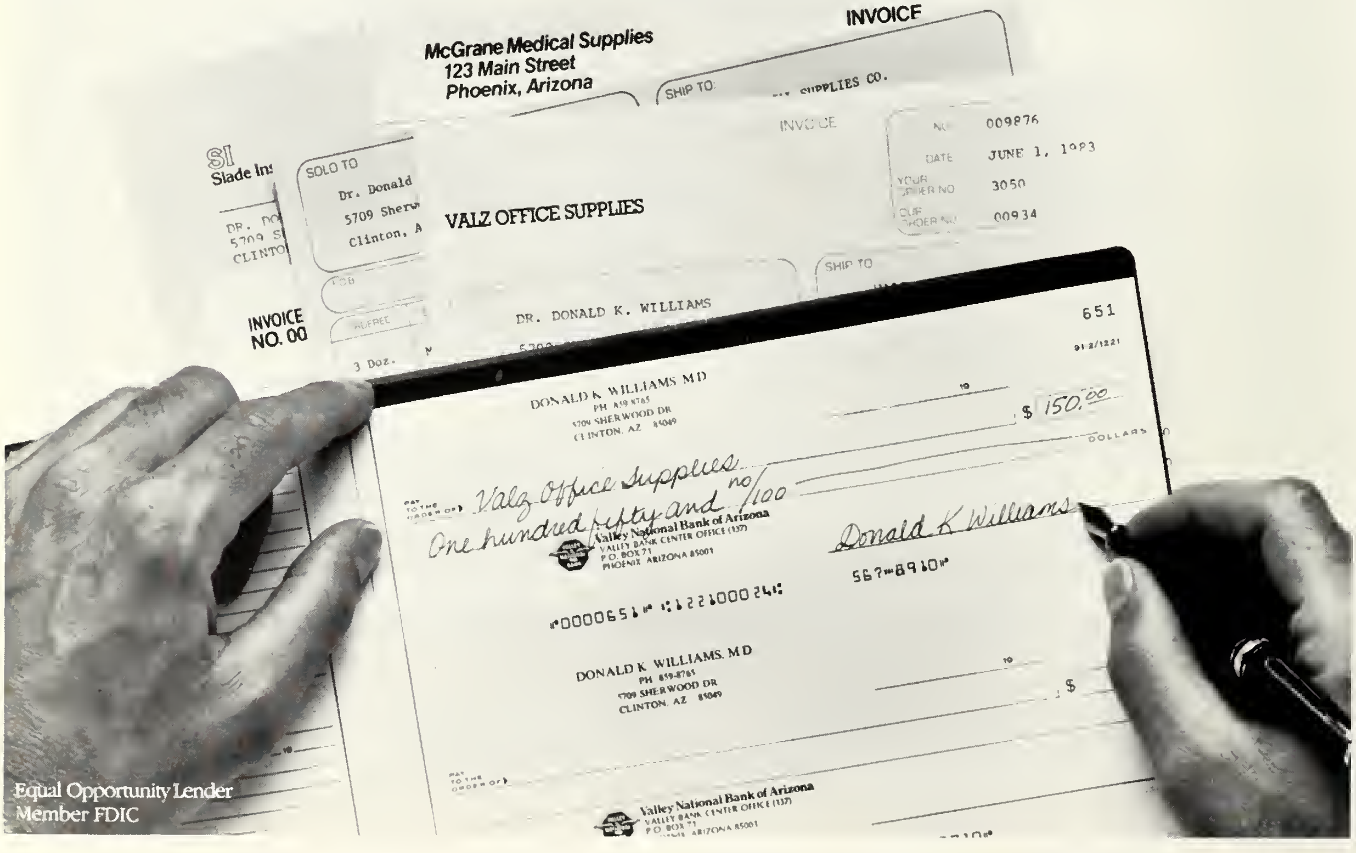

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Cardiology

Atrial Septal Defect

Rohit Patel, M.D.
Kenneth B. Desser, M.D.
Alberto Benchimol, M.D.

Editor:
Kenneth B. Desser, M.D.

If one excludes bicuspid aortic valve and mitral valve prolapse, atrial septal defect (ASD) is the most common congenital heart disease found in adults. There are three types of ASD: 1) ostium secundum, 2) sinus venosus, and 3) ostium primum. Ostium secundum is the most commonly encountered variety and comprises about 70% of ASD cases.[1] It is usually located in the region of the fossa ovalis, and may either be a single defect or a defect with a fenestrated appearance. Mitral valve prolapse is frequently associated with ostium secundum ASD. This association may explain an increased incidence of mitral regurgitation in patients over the age of fifty who have ASD.[1]

Sinus venosus ASD accounts for approximately 15% of cases. It is located in the upper portion of the interatrial septum and in the majority of cases, is associated with partial anomalous pulmonary venous drainage. Lewis et al.[2] and Cooley et al.[3] recognized the importance of anatomy from the surgical viewpoint and defined three features of sinus venosus ASD. First, a defect is located above the fossa ovalis and adjacent to the superior vena cava. Second, the margin of the defect is incomplete; the superior margin is absent and the posterior margin is partially present. Third, the defect is regularly associated with anomalous pulmonary venous drainage which is usually from the right upper lobe of the lung.[4]

The third type of ASD is called ostium primum, which accounts for 15% of cases and results from a developmental deficiency in the lower part of the interatrial septum.[5] The ostium primum defect is usually large and is associated with a cleft in the anterior mitral valve leaflet, which is attached to the ventricular septum by rudimentary chordae. Mitral regurgitation may be present at birth, thereby contrasting with the ostium

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From: The Institute for Cardiovascular Diseases, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona. Reprint requests to Alberto Benchimol, M.D., Good Samaritan Medical Center, P. O. Box 2989, Phoenix, Arizona 85062. Supported in Part by the E. Nichols Memorial Fund and The Institute for Cardiovascular Diseases, Inc., Phoenix, Arizona.

secundum variety which produces mitral insufficiency in adulthood. The characteristic finding of left axis deviation on the frontal plane electrocardiogram in subjects with ostium primum ASD is due to early posterobasal ventricular activation. This early activation can be ascribed to the posterior and inferior position of the AV node and hypoplasia of the left anterior fascicle.

There are other cardiac lesions occasionally associated with ASD. Pulmonary stenosis is present in five percent of cases.[6] Lutembacher's syndrome results from ASD and mitral stenosis occurring in combination. Most authorities view the mitral stenosis as being a consequence of independent rheumatic fever rather than from a congenital origin.

Blood flows through the uncomplicated ASD during diastole. The magnitude of the left-to-right shunt depends on compliance of the right and left atria and ventricles and on the ratio of systemic to pulmonary vascular resistance.[7] In older patients who have ischemic heart disease or hypertension, left ventricular compliance may decrease, resulting in an increased left-to-right shunt. A difference in mean right and left atrial pressure exceeding 5 mm Hg suggests the presence of an uncomplicated small ASD. Increased diastolic volume overload of the right ventricle ultimately leads to failure. Pulmonary hypertension may be related to: 1) high transpulmonary blood flow, 2) fixed arteriolar disease, or 3) both in combination. Some patients have pulmonary hypertension associated with increased pulmonary vascular resistance and they usually develop Eisenmenger's physiology. This is characterized by pulmonary vascular obstructive disease, decreasing left-to-right shunt, and eventually right-to-left shunting through the ASD. The basis for progression of pulmonary vascular resistance is as not yet totally clarified. There may be a genetic or developmental predisposition for some patients to develop Eisenmenger's syndrome while others with quite voluminous pulmonary blood flow do not manifest marked pulmonary vascular disease. Atrial septal defect is one of the conditions in which left ventricular failure might present with signs of right sided failure.

In the natural history of ostium secundum ASD the average life span is 50 years with large defects, and death is most often due to right heart failure, peripheral embolization or arrhythmias. In patients with ostium primum defect, the life span is approximately 30 years. Craig et al.[8] studied 128 patients with ASD and found that the most serious risk factor for death was pulmonary hypertension.

Clinical features of ASD are related to left-to-right shunting, presence or absence of right sided heart failure and the degree of pulmonary hypertension. The symptoms are mild fatigue and dyspnea which usually appear in adolescence, and significant right sided failure with supraventricular arrhythmias which occur at a later age. Physical examination is likely to reveal the following: 1) a second heart sound (S_2), which is widely split and fixed (i.e., it shows an imperceptible respiratory variation), 2) a loud first heart sound (S_1), 3) a systolic ejection murmur heard best at the pulmonary area, and 4) a high frequency diastolic murmur at the left lower sternal border. The electrocardiogram usually reveals complete or incomplete right bundle branch block in association with the secundum ASD, or left axis deviation with the ostium primum variety. The chest x-ray discloses enlargement of the main pulmonary artery and right heart chambers with increased plethora of the lung fields.

The mechanism of splitting of S_2 is related to prolongation of right ventricular systole due to a diastolic volume overload, yet this explanation may be only partially correct. There are many reported cases with persistent splitting of S_2 after proven repair of ASD. If splitting was due to volume overload of the right ventricle, one would expect significant correlation between the size of the shunt and duration of splitting. Castle et al.[9] were unable to show such a correlation. The varying spectrum of S_2 splitting can be explained by taking into account the interval between equalization of right ventricular and pulmonary artery pressures, their cross over time in relation to pulmonary valve closure as well as the relative duration of right and left ventricular systole.[10] Other auscultatory features are more readily explained: Loud S_1, increased velocity of tricuspid valve closure; right heart fourth heart sound, decreased compliance of the right ventricle; systolic ejection murmur, increased blood flow through the pulmonary valve; systolic ejection click, dilation of the pulmonary artery; high frequency diastolic murmur at left lower sternal border, increase blood flow across the tricuspid valve.

After the age of 50, patients can be divided into two categories; those who still are asymptomatic and those in whom disability is present. A very important factor leading to the development of dyspnea and appearance of cardiac failure is atrial arrhythmia since affected patients are increasingly prone to atrial flutter or fibrillation late in life. Pulmonary and systemic emboli are relatively common in the elderly.

Adolescent patients with Eisenmenger's physiology and secundum defect may be cyanotic with prominent "A" waves of the jugular vein, loud P_2 and increased right sided precordial motion.

Atrial septal defect can be suspected by typical clinical features. If the diagnosis is clinically obvious, cardiac catheterization can be avoided by employing the relatively noninvasive radionuclide techniques to confirm and quantitate the shunt. Radionuclide angiocardiography correlated well with invasive studies in subjects with pulmonary-to-systemic flow ratios ($Qp:Qs$) > 1.5.[11] Cardiac catheterization is justified in the following circumstances:[12] 1) when the physician is not sure about the diagnosis, 2) when clinical diagnosis is certain, but the absence of cardiomegaly and tricuspid diastolic murmur suggests the possibility that the shunt is quite small, and 3) when an associated lesion is suspected, (e.g., mitral stenosis). The M-mode chocardiogram in patients with ASD shows right entricular dilation and increased tricuspid valve excur-ion. There is frequently paradoxical motion of the eptum. Two-dimensional echocardiography may be helpful in identifying the cleft mitral valve in some patients with ostium primum defect. Contrast sector echocardiography can be helpful in making the diagnosis and assessing directional changes in the shunt.

Management

Surgical repair is advised for all patients with uncomplicated ASD who have Qp:Qs > 1.5. The older patients with ASD and chronic right heart failure without evere pulmonary vascular obstructive disease will usually improve with shunt closure, but right ventricular hypertrophy on the electrocardiogram usually persists.

Patients with Eisenmenger's physiology who have net ight-to-left shunts are inoperable. Patients with left-to-ight shunts and pulmonary to systemic vascular esistance ratios greater than 0.67 and Qp:Qs < 1.5 are at ncreased risk or complications following surgical repair. n these subjects, postoperative decline of pulmonary rtery pressure occurs due to decreased blood flow without concomitant decrease in pulmonary vascular esistance (PVR). PVR may continue to rise postoperatively in some patients due to pulmonary hrombosis, and for affected subjects chronic anticoagulation is recommended. Bacterial endocarditis prophylaxis is not routinely advised in patients with ASD unless there is associated mitral valve disease or right ided valvular incompetance. The ideal time for surgical closure is between five and ten years of age.

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Dermatology

Use and Abuse of Accutane,® Roche (13-cis retinoic acid isotretinoin) in Acne Vulgaris— A Personal Perspective

Ronald C. Hansen, M.D.

Editors:
Ronald C. Hansen, M.D.
Robert A. Schwartz, M.D.

The recent release of isotretinoin (Accutane,® Roche) or 13-cis retinoic acid, has been widely heralded as a breakthrough in acne therapy, and, indeed, it is. For those patients with severe, recalcitrant acne who are resistant to conventional therapy, it can be extremely valuable, and may improve up to 95% of difficult to manage acne patients. However, it is evident that enthusiasm for the new "cure" for acne has caused physicians to prescribe isotretinoin for nonscarring and noncystic acne, and for acne in which conventional therapy has not been optimized. This practice is not consistent with the intent of the manufacturers of isotretinoin, and may not be in the long-term best interest of the patients. This communication presents a rationale for avoiding the use of isotretinoin where possible, and defines a concept of conventional therapy for severe acne, whereby many patients may be successfully treated without isotretinoin.

From: Internal Medicine (Dermatology) and Pediatrics. The University of Arizona Health Sciences Center, Tucson, Arizona 85724. Reprint requests to Ronald C. Hansen, M.D. Assistant Professor, Internal Medicine and Pediatrics, University of Arizona Health Sciences Center, Tucson, Arizona 85724.

Problems with Isotretinoin (Accutane®)

Most of the following discussion is based on information taken from the product brochure (Roche), which is reproduced in the *Physician's Desk Reference.*

1. Side Effects

Whereas most of our systemic acne therapies have minimal side effects, they are universal with isotretinoin. In fact a patient who develops no mucocutaneous symptoms on isotretinoin is probably not taking the medication. Cheilitis, often associated with fissuring and bleeding may occur in over 90% of patients. Eighty percent of patients may develop dry skin, pruritus, epistaxis, dry nose, and dry mouth. Conjunctivitis develops in approximately 40%. Musculoskeletal pain occurs in approximately 16%. I have seen this as a persistent, quite troublesome side effect in a 14-year-old boy during the full three months of Accutane therapy. Less frequent complaints include temporary hair loss, peeling of the palms and soles, fatigue, and headache. Patients who take isotretinoin should be carefully advised of the frequency of the mucocutaneous side effects, since they are the rule rather than the exception.

2. Cost

Isotretinoin represents the most expensive of the acne treatments in terms of cost for an individual day's worth of therapy. Fortunately, many pharmacists are willing to dispense this product at essentially wholesale price, approximately $1.50 per 40 mg tablet. Since a typical dose is two tablets per day, the daily cost would be three dollars.

3. Need for laboratory monitoring

Isotretinoin affects numerous body tissues other than the sebaceous glands. Reported alterations in laboratory values, with approximate percentages are as follows: elevated triglycerides (25%), depressed high density lipoproteins (16%), elevated erythrocyte sedimentation rates (25%), depressed hematologic parameters found on complete blood count and platelet estimations (5% to 10%), and elevated liver function tests (5% to 10%). Since some of these parameters may need to be followed as often as once monthly, an increased economic burden is added.

4. Need for more frequent office visits

Because of frequent side effects and the need for laboratory monitoring, I see patients on isotretinoin each month, compared to every six to eight weeks for patients not receiving this medication. Again, this increases the cost of their care, at least in the short run.

5. Teratogenicity

Although there are no good data to suggest either teratogenicity or safety during pregnancy in humans, animal studies in this regard are of major concern. Consequently, isotretintoin should not be given to any female who is pregnant or potentially pregnant during the period of therapy.

6. Other groups in which isotretinoin is relatively contraindicated

Besides pregnant women, nursing mothers should not be treated with isotretinoin until more data are available relative to excretion in breast milk, and possible effect on the infants. Patients with a tendency toward hyperlipidemia should probably not be treated with this compound. These might include those who are obese diabetic, or alcoholic.

7. Other assorted long-term concerns

a. Long-term usage in animals has produced increased rates of pheochromocytoma as well as testicular atrophy.

b. Hyperostosis, spinal degeneration, epiphyseal changes, and corneal opacities have been produced in animals. Five humans patient have also developed corneal opacities on isotretinoin, but these were not acne patients. Instead they had various disorders of keratinization and had received the medication over prolonged periods of time. Hence, the corneal changes may have been in part related to their underlying disease, and may not have been a specific affect of the medication.

c. Preliminary evidence of efficacy in cancer chemotherapy research (e.g., cutaneous T-cell lymphoma) has demonstrated the potency of isotretinoin as a chemotherapeutic agent, and raises questions about its affect on lymphoid tissue as well as immunity.

d. The very fact that isotretinoin can produce such a remarkable duration of remission in cystic acne, lasting several years, raises questions about the possibility of persistent changes in tissues other than the pilosebaceous unit. It would be remarkable if only one tissue had persistent effects, given the multiplicity of tissues in which short-term effects are seen with isotretinoin.

Conventional Therapy Prior to Isotretonoin (Accutane®)

In spite of the numerous real and potential problems with isotretonoin, it remains a fact that a small percentage of acne patients will respond only to this agent, and should receive it. The following is my own sequence of therapies prior to defining a failure of conventional treatment. In less severe cases, where significant scarring has not already occurred, I may well exhaust each step listed, sequentially, prior to using isotretinoin. This could mean employing four different antibiotics before making that decision. On the other hand, where the case is most severe, with established deep cystic acne, marked scarring and, hence, a higher likelihood of failure with the first-line antibiotics, I may start with the second-line antibiotics, and move more quickly to a decision to treat with isotretinoin. It should be stressed that a large percentage of reputed treatment failures prove to have been failures in compliance, selection of much too low of an antibiotic dosage or too short of a therapy duration, and do not, in fact, represent true failures of the chemicals selected.

1. First-line antibiotics

With all antibiotics used in acne, a six to eight week follow-up is needed during which to judge response to therapy. In fact, twelve weeks is probably a better point at which to make a decision relative to efficacy.

ncidentally, eight to twelve weeks or longer may be eeded even with isotretinoin in order to judge therapy esponses.

a. Tetracycline: some of the most severe cases of cne will be tetracycline-responsive. Dosage must be dequate, meaning that a minimum dose is 500 mg given vice daily. In a case of severe, scarring acne, I will ometimes start at 1500 mg per day in order to be at a aximal dosage from the beginning. Tetracycline must e given on an empty stomach, which means it should e taken with a glass of water only, one hour prior to eals or two hours after meals. It must never be taken ith a glass of milk, or simultaneously with iron, calcium, r zinc supplements. A major advantage of tetracycline its relative inexpensiveness. It is also remarkably free f serious side effects. However, it is contraindicated in regnancy, it is associated with candida infections in ten ercent of young women, and has occasional astrointestinal side effects. Photosensitivity is not really problem at dosages of 1 gm/day, but may be enountered in Arizona with increasing doses. The major isadvantages of tetracycline include the need to take it n an empty stomach; complying with this is difficult for any teenagers.

b. Erythromycin: This medication is as effective as tracycline in the management of acne, but it is gnificantly more expensive and has a higher incidence f gastrointestinal side effects. One advantage is that it is etter absorbed than tetracycline when taken with food r dairy products, and, hence, timing of administration is ot as critical. Dosage is usually 500 mg twice daily, lthough where gastrointestinal side effects intervene, is may need to be split up into 250 mg increments iven three to four times daily to minimize symptoms.

2. Second-line antibiotics

a. Minocycline: Minocycline is a newer genration tetracycline, and may be a superior acne edication. It is better absorbed from the stomach, even n the face of food or dairy products, and this fact is a ajor advantage compared to standard tetracycline. A ajor disadvantage is cost, which may average $1.00 per 0 mg tablet. Full-dose in cystic acne is 100 mg twice aily. Two additional side effects can be troublesome. hese include the frequent onset of mild vestibular isturbance manifested as dizziness, during the first few eeks of therapy. This normally disappears with time, nd patients usually do not have to discontinue the edication. A much less common side effect is an diocyncratic hyperpigmentation, which often results in blue-black staining of the acne lesions themselves, or n some cases of normal skin. Although uncommon, this ide effect is being increasingly recognized with inocycline.

b. Clindamycin: Clindamycin is an excellent ntimicrobial for patients with severe acne. It is well bsorbed, and relatively trouble-free. Its major isadvantage is its historical association with pseudoembranous colitis, which tarnished its reputation as an cne antimicrobial during the previous decade. This side effect, however, can be avoided if patients understand that one cannot continue this medication should diarrhea appear, and that the drug will be stopped immediately should that symptom ensue. Pseudomembranous colitis is extremely rare in acne patients on clindamycin, and will not progress if this precaution is observed. However, not all practitioners are prepared to use this medication, and obviously it can be used only in reliable patients.

3. Intralesional steroid injections

Intralesional steroid injections remain an important feature in the treatment of cystic acne, and may even be combined with isotretinoin therapy. These injections can be used to prevent scarring in established nodulocystic lesions, while waiting for the effect of the systemic agent to become manifest. The usual concentration is 2 to 4 mg per cc of triamcinolone acetonide, injecting only a small amount, usually 0.1 to 0.2 cc into each cyst. Since intralesional steroids are associated with temporary atrophy of some lesions, and since the acne lesions which are injected are inherently scarring, one must first explain the nature of lesional scarring and steroid atrophy prior to using this modality. Permanent atrophy will almost always result from the lesion itself rather than the intralesional steroid.

4. Estrogen therapy

In the female patient, high dose estrogen therapy in the form of birth control pills is a very effective antiandrogenic approach to severe acne. Unfortunately, one must usually choose a very high dose of estrogen (over 75 micrograms) to get a predictable effect.

Obviously, this must be carefully negotiated with the young woman, and if a minor, her parents. The vascular and thrombotic side effects must be reviewed even though they are rare in the young patient. I usually choose either Ortho Novum 1/80 or Enovid E.

5. Isotretinoin

After satisfying myself that the above steps have not been effective, or are unacceptable to the patient, I select isotretinoin for therapy, optimistically, because it will probably work, but cautiously, with careful explanation to the patient of the numerous concerns detailed in this paper. The long-term safety of this product has not been assured, and many of the questions raised need to be answered before we expand the usage of this preparation to less severe grades of acne. Used appropriately, this medication can be a real face-saver. The package insert developed by Roche Laboratories as reproduced in the current *Physician's Desk Reference* should be carefully reviewed by all practitioners who intend to use this agent. Most of the data in this article is extracted from that package insert. Appropriate usage of this important medication will protect both the patient and the physician.

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Medical Genetics

Genetics and Cancer: Chromosomes and Oncogenes

Frederick Hecht, M.D.
Barbara K. Hecht, Ph.D
Avery A. Sandberg, M.D.

Editor:
Frederick Hecht, M.D.

Abstract

A conceptual advance has occurred in cancer research pertaining to the mechanism by which a normal cell becomes a cancer cell. Although it has been known for more than twenty years that specific chromosome aberrations mark specific cancer cells, only recently has it been learned that human chromosomes carry oncogenes with DNA homologous to viral oncogenes: transforming genes. The location of each oncogene in humans corresponds to the site of a cancer chromosome change. The sequence of events in carcinogenesis may thus be: 1) cancer chromosome change, 2) move and rearrange oncogene, and 3) activate oncogene.

The mechanism of cancer has long been a mystery. Now this mystery may be unraveling through studies involving chromosome aberrations in cancer cells and oncogenes.

Oncogenes

Oncogenes are single genes associated with the transformation of cultured cells and with experimenta oncogenesis. With cells in culture, oncogenes appear to transform cells so that they function as malignant cells In experimental animals, oncogenes can clearly induce tumors.

Much work has been done on oncogenes, in one clas of viruses: retroviruses. The human chromosome complement contains similar DNA sequences homologous to oncogenes in retroviruses. These similar DNA sequences in humans are cellular oncogenes.

Under normal circumstances, cellular oncogene have a low degree of activity in transcription: they make RNA at a low level of activity and function normally in developmental metabolism.

Under special circumstances, these cellular oncogenes may undergo a rearrangement in their DNA sequence and become transcriptionally highly active They may then produce 100 times or more product and overload the cell with one protein or produce an abnormal protein and this, it is now thought, may be a trigger for the cell to transform from normal to malignant, from a normal cell to a cancer cell.

The DNA sequences homologous to viral oncogenes are cellular and so are termed cellular oncogenes. The letter "c" before the name indicates cellular. Fo example, c-myc is the cellular homolog to the vira oncogene termed myc, while v-myc is the vira oncogene.

By the use of recombinant DNA technology, oncogenes can be mapped to specific locations on human chromosomes. The celluar oncogene c-myc, fo example, is now known to be human chromosome number 8. In some cases, the precise subchromosoma site of the cellular oncogene has been found. With c myc, this site on chromosome 8 is on the long (q) arm in chromosome band 8q24. Table 1 provides a list of human oncogenes and their locations.

Chromosome Aberrations in Cancer

Chromosome aberrations mark cancer cells. This ha been well established since 1960 when the Philadelphia chromosome was discovered in chronic myelocytic leukemia. The Philadelphia chromosome is a number 22 chromosome involved in a translocation usually with chromosome 9. The translocation signified by a "t" results in an exchange of chromosome material between the long (q) arms of these two chromosomes. Today, the Philadelphia chromosome translocation is written in an internationally-agreed-upon shorthand formula a t(9;22)(q34;qll) meaning a translocation between chromosome 9 and 22 occurring at bands 9q34 and 22q11.

Specific chromosome changes have been found in numerous other cancers. This rapid increase in cancer cytogenetic knowledge has, for example, led to a new journal entitled *Cancer Genetics and Cytogenetics*.

Among the chromosome aberrations in cancers are a translocation between chromosomes 8 and 14 in Burkit lymphoma, a translocation between chromosomes

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From: The Genetics Center and Cancer Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arziona 85281. Work relating to chromosomes in this paper was done on research grants (to F.H. and A.A.S.) from the National Cancer Institute of the National Institutes of Health. Reprint requests to Frederick Hecht, M.D., 123 East University Drive, Tempe, Arizona 85281.

and 21 in one form (M2) of acute myeloid leukemia.

Solid tumors have been found also to be marked by specific chromosome aberrations. For example, in ovarian adenocarcinoma there is a consistent transocation between chromosome 6 and 14 and in meningiomas there is often loss of a chromosome 22. A ist of a number of these hallmark chromosome changes n human cancer cells is provided in Table 2.

Oncogene Map Locations

By recombinant DNA techniques, a number of human homologs of oncogenes have been mapped. The map ocations of these oncogenes, as mentioned, are given in Table 1.

The oncogenes c-ras^H and c-ras^K are closely related in molecular terms. Curiously enough, c-ras^H is on chromosome 11 while c-ras^K is on chromosome 12. This s interesting because chromosomes 11 and 12 have imilar banding patterns. Further, there is a certain degree of genetic similarity between chromosomes 11 and 12 with the gene for one form of the enzyme lactic dehydrogenase LDH-A being on chromosome 11 while LDH-B is on chromosome 12. This suggests that chromosomes 11 and 12 arose long ago from a single chromosome by duplication and subsequent divergent evolution. The duplication resulted in the duplication of he c-ras oncogene so c-ras^H is on No. 11 and c-ras^K is on No. 12.

Chromosome Cancer Changes

Let us now look at the chromosomes with oncogenes, Table 1. We see that the *same* chromosomes are altered n cancer cells. A list of these cancer cell chromosome changes is in Table 2.

In Burkitt lymphoma (BL), the usual translocation is between chromosomes 8 and 14. However, the ranslocation in BL may be between chromosome 8 and chromosomes 2 or 22. In every case the breakpoint in chromosome 8 is at precisely the same spot: in band 8q24.

Whenever the BL translocation is of the t(2;8) type, the tumor expresses kappa light immunoglobulin chains. By contrast, whenever the BL translocation is of the t(8;22) type, the tumor expresses lambda light chains. This is consistent with the positions of the kappa and lambda chain genes. The kappa genes are on chromosome 2 and the lambda genes are on chromosome 22.

Concordance Between Oncogene Locations and Cancer Chromosome Changes

Let us compare the oncogene locations, Table 1, and the cancer chromosome changes, Table 2, and we see a striking concordance. This is shown in Table 3.

The human oncogene c-myc on chromosome 8 has now been most extensively studied. In BL the translocation between chromosomes 8 and 14 moves the c-myc oncogene on chromosome 8 into juxtaposition with chromosome 14. Specifically, it moves c-myc next to or into the midst of the immunoglobulin heavy chain genes on chromosome 14. In return, DNA coding for heavy chains is moved from chromosome 14 next to material on chromosome 8. The translocation is thus reciprocal between chromosomes 8 and 14 and shifts the positions of the c-myc oncogene and the heavy chain genes.

A similar chain of events has now been shown with the t(9;22) translocation in chronic myeloid leukemia (CML). The oncogene c-abl on chromosome 9 is moved by translocation onto chromosome 22, indicating reciprocity between chromosomes and again shifting an oncogene.

Table 1
Human Oncogene Locations

	Location	
Oncogene	**Chromosome**	**Band(s)**
c-myb	6	6q22-24
c-mos	8	8q22
c-myc	8	8q24
c-abl	9	9q34
c-ras^H	11	11p13
c-ras^K	12	
c-fes	15	15q24-25
c-src	20	
c-sis	22	

Table 2
Cancer Chromosome Changes

Chromosome	Change	Cancer*
6	t(6;14)(q21;q24)	Ovarian adenocarcinoma (Ovarian Ca)
	6q-	Acute lymphocytic leukemia (ALL)
	+6	Non-Hodgkin's lymphoma (NHL)
8	t(8;21)(q22;q22)	Acute myelocytic leukemia (AML)
	+8	Acute nonlymphocytic leukemia (ANLL)
	t(8;14)(q24;q32)	Burkitt lymphoma (BL)
	t(2;8)(p12;q24)	Burkitt lymphoma (BL)
	t(8;22)(q24;q11)	Burkitt lymphoma (BL)
9	t(9;22)(q34;q11)	Chronic myelocytic leukemia (CML)
11	11p13-	Wilms' tumor (Wilms' + aniridia)
12	+12	Chronic lymphocytic leukemia (CLL)
15	t(15;17)(q22;q21)	Acute promyelocytic leukemia (APL)
20	20q-	Myeloproliferative disease (MPD)
22	t(9;22)(q34;q11)	Chronic myelocytic leukemia (CML)
	t(8;22)(q24;q11)	Burkitt lymphoma (BL)
	-22	Meningioma

*Certain tumors such as Burkitt lymphoma are listed several times because serveral chromosome changes may mark them.

Table 3
Corcordance Between Oncogene Location and Cancer Chromosome Change

Chromosome	Oncogene	Cancer Chromosome Change*
6	c-myb	Ovarian Ca, ALL, NHL
8	c-mos	AML, ANLL
	c-myc	BL
9	c-abl	CML
11	c-ras^H	Wilms'
12	c-ras^K	CLL
15	c-fes	APL
20	c-src	MPD
22	c-sis	CML, BL, Meningioma

*For detailed description of chromosome change and type of cancer, see Table 2.

Position Effect

The position of genes in cancer cells may be critical, as we initially proposed in 1977. Genes relating to cancer are usually in a benign location. By a chromosome change, genes are repositioned in a malignant location.

With the translocation between chromosomes 8 and 14 in BL, an oncogene on chromosome 8 is relocated in or next to the heavy chain genes on chromosome 14. A rearrangement in the oncogene takes place and the oncogene is activiated beginning with highly active transcription of DNA, overloads the cell with gene product and moves the cell into a malignant mode.

Since the translocation between chromosomes 8 and 14 involves one series of heavy chain genes on chromosome 14, heavy chains for immunoglobulins can only be made by the untouched normal heavy chain genes in the remaining chromosome 14. By default, it is left to do the job. The same reasoning applies to kappa and lambda light chains: the normal chromosome 2 makes kappa light chains in BL with a t(2;5) translocation, while the normal chromosome 22 makes lambda light chains in BL of the t(8;22) type translocation.

The overall sequence of events in oncogenesis is coming clear: 1) cancer chromosome change, 2) move and rearrange oncogene, 3) activate oncogene.

References

Articles are now appearing in rapid sequence on this subject, especially in such journals as *Nature, Science, Proceedings of the National Academy of Sciences*, and *Cancer Genetics and Cytogenetics*. Specific references in bibliographic form are available upon request.

Neurology

Drug-Induced Movement Disorders

J. Michael Powers, M.D.

Editors:
James L. Frey, M.D.
J. Michael Powers, M.D.
Lawrence Z. Stern, M.D.

A thirty-four-year-old man presented with spasms of eye closure and lower facial grimacing. He denied using any medications. Extensive neurologic evaluation proved negative. Ultimately, it was learned he had chronically used a nonprescription antihistamine-containing decongestant spray on a daily basis. His facial movements resolved after stopping the antihistamine.

A seventy-five-year-old woman presented with a rhythmic flexion-extension head tremor and associated lip smacking and tongue protruding movements. She denied taking medications and specifically denied using any medication for nervousness. It was subsequently learned that she chronically used Compazine for indigestion. Her movement disorder began when she stopped the Compazine.

An eighty-one-year-old woman had a long history of mild Parkinson's disease. Her rigidity and tremor abruptly worsened in the few months prior to her evaluation. Her deterioration coincided with the use of Reglan for gastrointestinal symptoms. Her Parkinsonism returned to its previously mild degree following cessation of the Reglan.

From: 525 North 18th Street, Suite 602, Phoenix, Arizona 85006.

These vignettes portray three situations in which unrecognized medications induced or aggravated move-ment disorders. Drugs must be considered as a possible etiology in all patients presenting with a movement disorder. The relationship of medication to abnormal movement is easily overlooked by the patient. The evaluating physician must be aware of these relationships and must have a high index of suspicion in pursuing a detailed medication history. Ultimately, the treatment for these drug-induced movement disorders consists of identifying and then stopping the responsible medication.

Effective diagnosis requires that the physician know the different medications causing each type of abnormal movement. When a patient presents with a movement disorder, the physician must first identify the pattern of abnormal movement and then include the relevant medications in the differential diagnosis. Table 1 lists the drugs commonly associated with each type of abnormal movement.

Many movement disorders are dominated by orofacial dyskinesias which include both rapid movements (chorea) and more sustained abnormal postures (dystonia) such as puckering and blepharospasm. Rapid orofacial movements are distinguished from extremity chorea by a tendency to be stereotyped and repetitive rather than random and irregular. Jankovik recently authored two excellent reviews on this subject.[1,2]

Table 2 identifies the different types of abnormal movement resulting from specific medications or groups of medications. When a physician prescribes these medications, the immediate and delayed motor side effects should be kept in mind. Caution must be exercised in giving a medication which may accentuate a preexisting movement disorder (i.e., Lithium to patients with essential tremor or phenothiazines to patients with Parkinsonism).

Table 1
Abnormal Movements Induced by Medication

Movement	Drug
Tremor	Epinephrine, Isoproterenol, Caffeine, Theophylline, Lithium, Tricyclic Antidepressants, Valproic Acid, Amphetamines
Ataxia	Most Anticonvulsants, Sedatives and Antianxiety Agents, Lithium
Myoclonus and Tics	Amphetamines, Methylphenidate
Chorea	Neuroleptics, Levodopa, Bromocriptine, Lithium, Metoclopramide, Phenytoin, Carbamazepine, Oral Contraceptives
Dystonia	Neuroleptics, Levodopa, Bromocriptine, Lithium, Metoclopramide, Phenytoin, Carbamazepine, Primidone, Antihistamines
Parkinsonism	Neuroleptics, Reserpine, Metoclopramide Trimethobenzamide

An understanding of the mechanisms of drug-induced movement disorders must be based on neurotransmitter pharmacology. Unfortunately, the biochemical mechanisms are incompletely understood. The pharmacologic mechanisms remain unknown for some conditions, such as the anticonvulsant-induced dyskinesias.[3] A number of medications causing abnormal movements do so through effects on the dopaminergic system. As one studies these patterns of abnormality, a number of paradoxical relationships become evident. First, a similar pattern of abnormal movement can result from both dopaminergic agonists and dopaminergic blocking agents. Second, a given

Table 2
Drug-Induced Movement Disorders

Drug	Tremor	Ataxia	Myoclonus	Chorea	Dystonia	Parkinsonism
Neuroleptics				+	+	+
Antidepressants	+			?		
ithium	+					?
Amphetamines	+		+			
henytoin Dilantin		+		+	+	
Carbamazepine Tegretol		+		+	+	
Valproic Acid Depakene	+	+			+	
Primidone Mysoline		+		+	+	
evodopa	+			+	+	
Metaclopramide Reglan				+	+	+
Trimethobenzamide (Tigan)				?	?	+
Antihistamines					+	

medication can induce several different types of abnormal movement. These inconsistencies can be partially explained by our improved understanding of receptor theory. Just as peripheral adrenergic receptors can be subdivided into different classes of alpha and beta receptors, the dopamine receptors in the brain appear to be divisible into different subtypes. Additionally, receptors are present in different locations in the brain. Thus, activation of dopamine receptors in different areas may have different effects. These finding may explain the seeming paradox in which a patient with Parkinsonism (dopamine deficiency) may be treated with L-Dopa and develop dystonic posturing (dopamine excess). Not all of the dopaminergic systems are involved in Parkinson's disease. Dopamine derived from L-Dopa can replace the deficient transmitter in the involved dopaminergic neurons and simultaneously cause an abnormal degree of stimulation of those systems which are not deficient.

One medication can cause different patterns of abnormal movement, presumably by different mechanisms. Neuroleptics are associated with five different patterns of motor abnormality (Table 3).[4] Since these are ubiquitous drugs, all physicians should be familiar with these syndromes. All neuroleptic medications have a dopamine receptor blocking effect. Neuroleptic-induced Parkinsonism results through this dopamine blocking mechanism.

Neuroleptics frequently induce akathisia, a motor and mental restlessness which may result from cortical level dopamine blockade or from an increase in dopamine synthesis due to feedback stimulation from the blockade.[4] Increasing the dose of "tranquilizer" may only increase the patient's restlessness.

The neuroleptic malignant syndrome is a rare condition characterized by progressive rigidity, fever and coma, attributed to another pattern of dopaminergic blockade.[5] Successful treatment with bromocriptine has recently been reported.[6]

Acute dystonic reactions may follow recent use of phenothiazines.[4] This is espeically frequent following short-term phenothiazine use for antiemetic effect. The acute reaction can be stopped by anticholinergic or antihistaminic medications such as Cogentin or Benadryl. It is paradoxical that these same antihistamines are also capable of inducing an acute dystonic reaction identical to that produced by phenothiazines.[7] This should be kept in mind if the patient presenting with an acute dystonic reaction does not respond to antihistamine therapy. In this event, Valium becomes the drug of choice.

Neuroleptics can also result in delayed, chronic reactions known as tardive dyskinesia and tardive dystonia. Tardive dyskinesia is characterized by orofacial movement such as lip smacking, puckering and tongue protrusion.[8,9]

The tardive dystonias have only recently been recognized as a result of chronic neuroleptic use.[10] These are sustained postures which may mimic spasmodic torticollis. It is suggested that the neuroleptics cause long-standing dopamine receptor blockade with resultant development of hypersensitivity of these receptors for dopamine. When the dosage of medication is reduced, the hypersensitive receptors are exposed to circulating dopamine again and abnormal movements develop. Reintroduction of the neuroleptic medication will only potentiate the underlying problem. No adequate therapy is currently available for this condition and the only treatment is prevention. This is best accomplished by avoiding the use of neuroleptic for inappropriate indications, limiting the duration and size of dosage, and avoiding concomitant use of anticholinergic medication.[8] Antihistamines can also induce a chronic dystonic orofacial movement but, unlike the tardive dyskinesias, it tends to develop while medication is being used and diminishes or completely resolves following discontinuation.[7,11]

Table 3
Extrapyramidal Side Effects of Neuroleptic (Antipsychotic) Medication

1. Parkinsonism
2. Akathisia
3. Neuroleptic Malignant Syndrome
4. Acute Dystonic Reactions
5. Chronic, Delayed Reactions:
   Tardive Dyskinesia and Tardive Dystonia

Reglan (metoclopramide) has recently been introduced as an effective treatment for delayed gastric emptying. It has a central dopamine blocking action which may result in precipitation or aggravation of Parkinsonism and occasional development of tardive dyskinesia.[12,13] Prolonged dysarthria has also recently been report following brief drug exposure.[14]

Some medications have actions and side effects which may not be obvious. Trimethobenzamide (Tigan) is a dopamine blocker which can induce or aggravate Parkinsonism. Promethazine (Phenergan) is a phenothiazine derivative with antihistaminic properties and hydroxyzine (Vistaril, Atarax) is an antihistamine.

These medications may cause the same side effects as other antihistamines. When pursuing possible medication effect, the mode of action of all medications must be ascertained.

In summary, movement disorders infrequently complicate use of some medications and predictably occur with others. Patients presenting with abnormal movement should have a detailed medication history. If a potential relationship exists, it is preferrable to initiate treatment by withdrawing a medication rather than starting additional drugs.

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Obstetrics & Gynecology

Carbon Dioxide Laser Treatment of Condylomata Acuminata

John H. Malfetano, Sr., M.D.
Augusto C. Marin, M.D.
John H. Malfetano, Jr., M.D.

Editors:
Byron C. Butler, M.D.
Walter B. Cherny, M.D.

In 1963 Stoppelli[1] using the electron microscope identified a papillomavirus as the etiologic agent in genital warts. The ancient Romans and Greeks accurately described the anatomic lesions although the causative agent was unknown.[2] The sexual transmission of condylomata acuminata was shown by Barrett[3] in 1954 with an incubation period of one to two months. It has recently been shown that the human papillomavirus of condylomata acuminata is different than the virus of common warts. Skin wart antisera was shown to react with both skin an genital wart viruses by Almeida[4] but genital wart antisera reacted only with genital warts. It appears that there is an antigenic and biologic difference[5,6] in the skin and and genital lesions. Marin and Meisels using electron microscopy found human papillomavirus in flat condylomata acuminata of the cervix.[7] Orth has postulated the virus of condylomata acuminata to be distinct and different than the remainder of the human papillomavirus group.[8] Zur Hausen has reported the occasional transformation of

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From: Department of Obstetrics and Gynecology, Good Samaritan Medical Center, P. O. Box 2989, Phoenix, Arizona 85062.

condylomata acuminata into invasive squamous cell carcinoma. The infectivity of the warts was shown by Oriel[9] to diminish with older lesions.

The original lesion of condylomata acuminata is a single flat wart like papilloma in the genital region. Soon after there are seen "daughter" lesions which may become confluent and spread to involve adjacent areas. The primary site of involvement is the genital and anal area, rarely are warts seen on the abdomen, thighs or buttocks. Large clusters of warts are often found in the perianal region and within the rectal canal. The hyperplastic horn like appearance of the lesions appear most commonly in the female on the labia, vagina, cervix and anal region. In the male the glans penis, corona of the glans, prepuce and urethral meatus are commonly affected sites. A conundrum has existed in the therapy of condylomata acuminata. So many varied forms of treatment is indicative that any one is inadequate. Wolters and Hesseltine[10] used radium in the dosage range of 75 to 450 milligram hours in eleven cases with good results. Many authors have used podophyllin either in alcohol or mineral oil with varied response. This overrated modality of therapy has been handed down through the years. Podophyllin resin is extracted from the dried rhizome of Mandrake or May-apple. It is a powerful skin irritant and caustic substance and has recently been recognized as an antimitotic cytotoxic drug. Cases have been reported of violent vomiting, confused states, hypokalaemia and death. It should never be used in pregnancy.[11] Other drugs as colchicine, sulfonamide, Fowler's solution as well as immunization therapy have been utilized with some success. Attempts at surgical excision and electrosurgical fulgeration has led to scar formation as well as hemorrhage and secondary infection. Cryotherapy is well suited for small lesions but causes annoying slough when used on massive or cluster type lesions. It is evident that there has been no unanimity in dealing with either the large massive lesions or the small flat verrucal type. The treatment of choice would be a systemic drug to kill the virus but to date none is available.

In this series 47 patients' treatment has been effected by the use of the carbon dioxide laser. The high energy source of the laser with its pinpoint "light knife" has proved highly successful. Numerous authors have previously reported the laser principle as it relates to use in gynecology.[12-14]

Our sexually active patients ranged in age from 18 to 28 years. Two patients were pregnant at the time of therapy, in the last trimester. Treatment in these latter cases was instituted due to massive involvement and to accomplish patient comfort and obviate delivery by cesarean section.[15] The sites of involvement were, rectal, anal, urethral, vaginal, cervical and labial. The lesions ranged in size from 1 to 2 mm to 4 to 4 cm. Fifteen patients were reported to have atypical cells on routine pap smear. One patient age 24 was referred for a random cervical biopsy that showed carcinoma in situ. Review of the slide showed koilocytic atypia with cellular ballooning and nuclear degeneration characteristic of condylomata acuminata. Meisels reported review of previously diagnosed dysplasia revealing 70% to actually be condylomatous lesions.[16] The colposcopic findings simulate dysplasia and careful scrutiny of the biopsy material will differentiate the two distinct lesions. Dysplastic cells migrate toward the surface while condylomas migrate downward toward the basement membrane.[17] In all cases histologic confirmation was obtained prior to treatment. Cervical disease is ablated without anesthesia, the only complaint being a feeling of heat and slight cramping. Four cases were treated with general anesthesia due to massive involvement while the remainder had one percent lidocaine infiltration. The skin warts were removed to immediately below skin level with average power density of 1300 watts per centimeter square. The depth of destruction in cervical lesions was 5 mm and vaginal 3 mm. Postoperative management of externally treated areas included sitz baths using "instant ocean," only six patient required analgesic preparations.

The carbon dioxide laser with its accurate beam is an excellent tool both to excise and vaporize condylomata acuminata. The zone of tissue destruction is exceptionally narrow and postoperative edema is almost negligible. Skin healing is rapid without scar formation. Both the viral particles and RNA are destroyed. Experimentation on the plume has revealed no hazardous effect to patient or operator. There has been no secondary infection noted as the laser beam leaves a sterile field. Meticulous examination must be carried out and all the condylomata acuminata removed or reseeding will occur in the healing areas. Treated areas within a few days have a clean granulating base and return to normal is complete within three to five weeks. A most important aspect of treatment must include examination of the consort. This should include referral to a urologist and if necessary colposcopic visualization of the penis, for often small flat lesions are not seen by cursory perusal. Two of our cases had recurrent disease. These proved to be reinfection by the male partners who had not sought treatment. By use of the carbon dioxide laser with the operating microscope and careful examination of the anatomy all lesions can be eradicated. Minimal pain except for large warts, lack bleeding and infection make this modality the number one tool for destruction and removal of condylomata acuminata usually in one stage. Cooperation of the patient is best achieved by a thorough explanation of the pathology of this viral disease.

In this series of 47 female patients excellent results were obtained in treating condylomata acuminata with the carbon dioxide laser. All patients had multiple lesions that involved cervix, vagina, labial skin, urethra and anal region. Healing was complete with no scar formation and no evidence of recurrence expect for two cases that were reinfected by an untreated consort. Patient acceptance is very high with this form of treatment.

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Oncology

Solar Ultraviolet Radiation and Skin Cancer

A Public Education Program

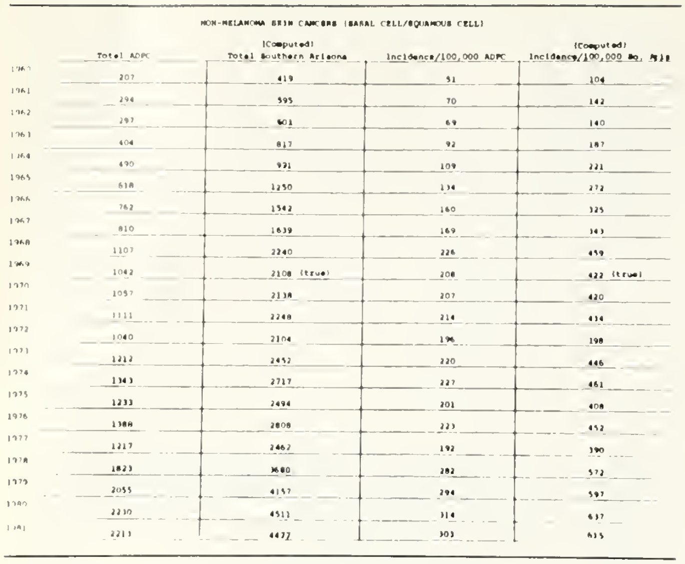
Michael M. Schreiber, M.D.
Thomas E. Moon, Ph.D.
Frank L. Meyskens, M.D.
Jean A. Mudron

Editors:
David S. Alberts, M.D.
Ellen Chase, B.S.

A public education program about solar ultraviolet radiation intensities and skin cancer has begun in Arizona. Its goal is to decrease the incidence of skin cancers in southern Arizona, an area with 615 nonmelanoma skin cancers per 100,000 population in 1981, and 27.2 melanomas per 100,000 population in 1978. As part of this effort, a Robertson-Berger sunburn meter has been installed atop the University of Arizona Health Sciences Center. Sunburn unit readings from the meter are converted to minutes of sun exposure needed to produce a redness of the skin and reported daily by the news media as the sun intensity index. Small variations in sunburn units were found from year to year, but daily and monthly variations were great.

The incidence of skin cancers that are either nonmelanomas or melanomas is being monitored and compared to previous studies to determine whether a decrease in the incidence of skin cancers in southern Arizona occurs.

From: The Department of Internal Medicine, the Cancer Center, and the Arizona Sun Awareness Program, University of Arizona Health Sciences Center, Tucson, Arizona. Presented at the sixth annual meeting of the American Society of Preventive Oncology, March 25, 1982, Bethesda, Maryland. Reprint requests to Associated Dermatologists, 5402 East Grant Road, Building F, Tucson, Arizona 85712 (Dr. Schreiber). Reprinted with permission from *Cutis* 30:516, 1982.



NON-MELANOMA SKIN CANCERS (BASAL CELL/SQUAMOUS CELL)

	Total ADPC	(Computed) Total Southern Arizona	Incidence/100,000 ADPC	(Computed) Incidence/100,000 So. Ariz
1960	207	419	51	104
1961	294	595	70	142
1962	297	601	69	140
1963	404	817	92	187
1964	490	991	109	221
1965	618	1250	134	272
1966	762	1542	160	325
1967	810	1639	169	343
1968	1107	2240	226	459
1969	1042	2108 (true)	208	422 (true)
1970	1057	2138	207	420
1971	1111	2248	214	434
1972	1040	2104	196	198
1973	1212	2452	220	446
1974	1343	2717	227	461
1975	1233	2494	201	408
1976	1388	2808	223	452
1977	1217	2462	192	390
1978	1823	3680	282	572
1979	2055	4157	294	597
1980	2230	4511	314	637
1981	2213	4477	303	615

Figure 1

Incidence of nonmelanoma skin cancers in southern Arizona for 1960 through 1981. (Total ADPC means Associated Dermatologists, P.C.)

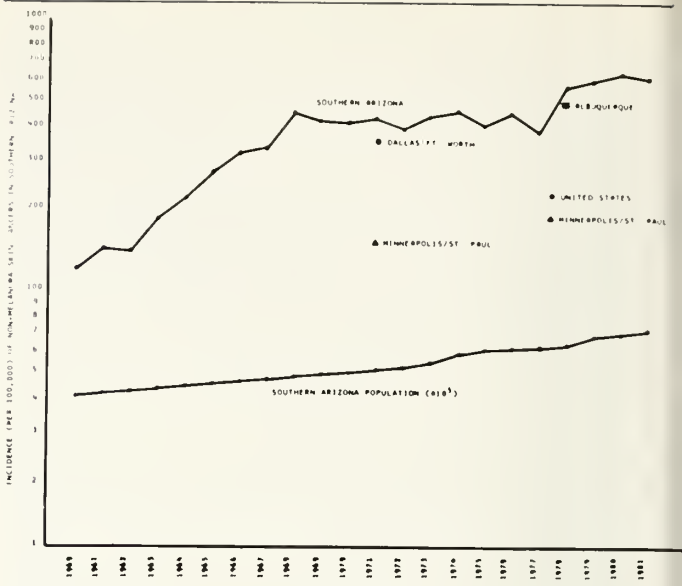


Figure 2

Incidence of nonmelanoma skin cancers in southern Arizona from 1960 through 1981, with growth of population in area.

In southern Arizona, epidemiologic studies of nonmelanoma skin cancers (basal and squamous cell carcinomas) in 1969 and 1972,[1,2] and melanomas in 1978,[3] show the highest reported incidence of these tumors in the United States and the second highest reported incidence in the world. Because solar ultraviolet radiation is an important agent in producing skin cancers, and because southern Arizona receives one of the highest intensities of ultraviolet radiation of any highly populated area in the United States, a program of public education in reporting the intensities of ultraviolet radiation was started in Tucson, Arizona.

In 1969, we found that the actual incidence of skin cancers that were nonmelanomas was 422 per 100,000 people[1,2] in southern Arizona, 34 percent above the previous highest documented report in the literature.[4] A similar study done in 1972 covered the thirteen-year period from 1960 through 1972.[1,2] This included only the skin cancers surgically removed by a five-member dermatology group which represented fifty percent of the practicing dermatologists in the area. One and one quarter percent of the patients seen in 1960 and three percent of the patients seen in 1972 by the five dermatologists had skin cancers. The adjusted and projected southern Arizona incidence rates from these figures and from a 1969 total enumeration study was 104 cancers per 100,000 in 1960; 420 per 100,00 in 1970; and 637 per 100,000 in 1980 (Figures 1 and 2). Thus, there was a 500 percent increase in the incidence of skin cancers that were nonmelanomas in southern Arizona during the past twenty-one years. However, these figures probably underestimate the actual rates because the number of dermatologists in Tucson has more than tripled from what it was in 1969 and because the population base included blacks, Hispanics, and American Indians as well as whites.

In 1980 (Figure 3) we surveyed all of southern Arizona for malignant melanomas from 1969 through 1978.[3] The number of melanomas increased from twenty in 1969 (adjusted incidence, 6.2 per 100,000) to one hundred twenty in 1978 (adjusted incidence, 27.2 per 100,000), an average annual increase of 339 percent over the ten-year period.

Reports indicate that these high incidence rates of nonmelanoma and melanoma skin cancers are due to the many geographic and meteorologic factors in southern Arizona which allow high intensities of ultraviolet radiation to reach the earth's surface including: Tucson's 32°N latitude; 2410 foot altitude; number of clear days which is greater than anywhere else in the United States (mean annual number of clear days, one hundred ninety-three; mean annual percentage of sunlight, eighty-six); and, high average daily temperatures of 81.5°F high and 54.1°F low.[5]

The very high intensity of ultraviolet radiation in Tucson has been confirmed with the use of a Robertson-Berger Sunburn Meter. A network of the meters (Figures 4 and 5) are installed at thirty-one sites worldwide (twenty-one in the United States), under the auspices of the National Oceanic and Atmospheric Administration to study ozone concentration.[6] One unit has been in Tucson for the past six years. This meter detects solar ultraviolet radiation below 330 nm (UVB), the response rising with decreasing wavelength.[7] The meter is wave length dependent designed with a spectral response resembling the skin's erythema action spectrum, thus indicating the erythema effectiveness. The data produced by the meter has been termed the sunburn unit (SBU).

The SBU is equal to a minimal erythema dose, the amount of UVB radiation which will produce a redness of untanned, fair, white skin (Type III) twenty-four hours after exposure. In Tucson, at noon, in midsummer, this amounts to fifteen minutes of exposure, or four hun-

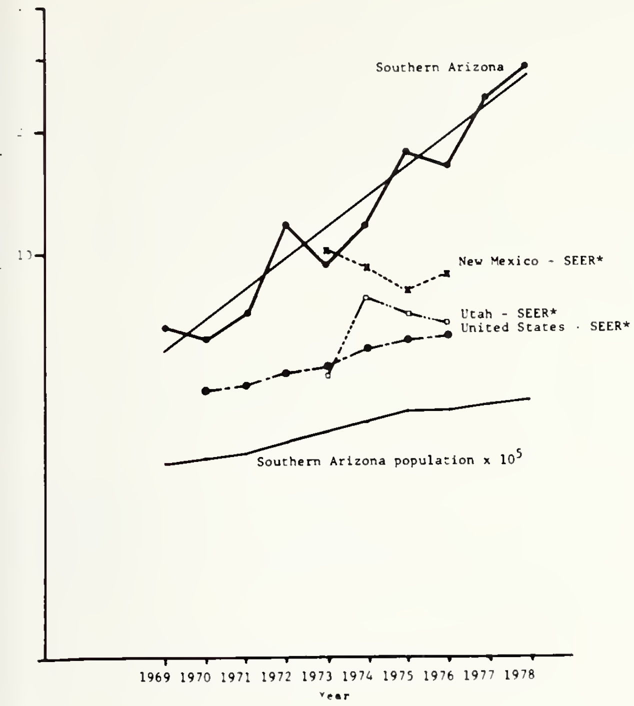


Figure 3
Incidence of malignant melanomas in southern Arizona, 1969 through 1978, comparing incidence in New Mexico, Utah and the United States; and growth of the southern Arizona population. (SEER means Surveillance, Epidemiology, and End Results program.) (From Schreiber MM, Bozzo PD, Moon TE: Malignant melanomas in southern Arizona, Arch Dermatol 117:6, 1981.)

dred forty counts on the meter.

In analyzing the past six years of data from this meter n Tucson, we found that the variation in UVB radiation ntensities was small from year to year but hourly, daily, and monthly variations were great due to seasons and cloud cover.

The Robertson-Berger meter at the Arizona Health Sciences Center prints the sun intensity data on paper tape every thirty minutes. The sun intensity index is derived by dividing the total number of hourly counts into four hundred forty, and then multiplying the resultant number by sixty to determine the number of minutes necessary for the skin Type III individual to acquire a skin redness for that particular hour of the day. The sun intensity index is reported to a local newspaper (*Tucson Daily Citizen*) each day for publication in their evening edition (Figure 6). Starting in January 1982, the sun intensity index and a projection of the readings for a cloudless day were given to the Tucson Bureau of the National Weather Service for daily distribution over the wire service to the Arizona news media. These figures are now being reported in both morning and evening newspapers and on daily television weather news reports.

A statement that the previous day's readings will hold true for the next day, provided cloud cover is the same, accompanies the printed figures. The newspaper also publishes, on the first day of each month, a graph showing readings by month for a year, averaged from

				Ave. SBU/day by month (over 5-8 yrs.) 1974-1980											
	Lat. (N)	Alt. (Km)	Ave. SBU/yr.	J	F	M	A	M	J	J	A	S	O	N	D
Mauna Loa	19.5°	3.38	7078±326	14	18	20	22	23	25	24	24	23	17	14	13
Tucson	32.0°	.74	4403±473	5	8	12	18	21	23	21	20	16	11	7	5
Albuquerque	35.0°	1.51	4511±83	4	7	10	16	18	22	21	19	15	10	6	4
Oakland	37.7°	<.1	3426±115	3	4	7	12	15	17	17	15	11	7	4	2
Philadelphia	40.0°	<.1	2441±106	2	3	5	9	10	12	13	11	8	5	3	1
Belak-Ovsky (Poland)	51.8°	<.1	1521±100	.4	1	2	4	8	10	10	8	6	2	.6	.3

Figure 4
Daily average dose at SBU per month over five to eight years at six stations, showing latitude and altitude. (Reprinted with permission from: Photochem Photobiol, vol. 35. Berger DS; Urbach F: A climatology of sunburning ultraviolet radiation 1982, Pergamon Press, Ltd., New York. Tucson added for comparison.)

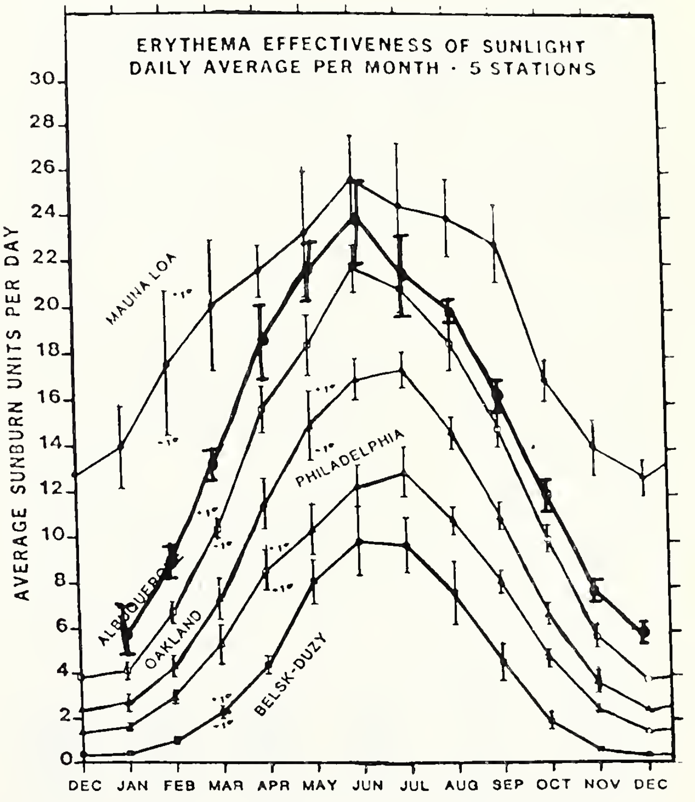
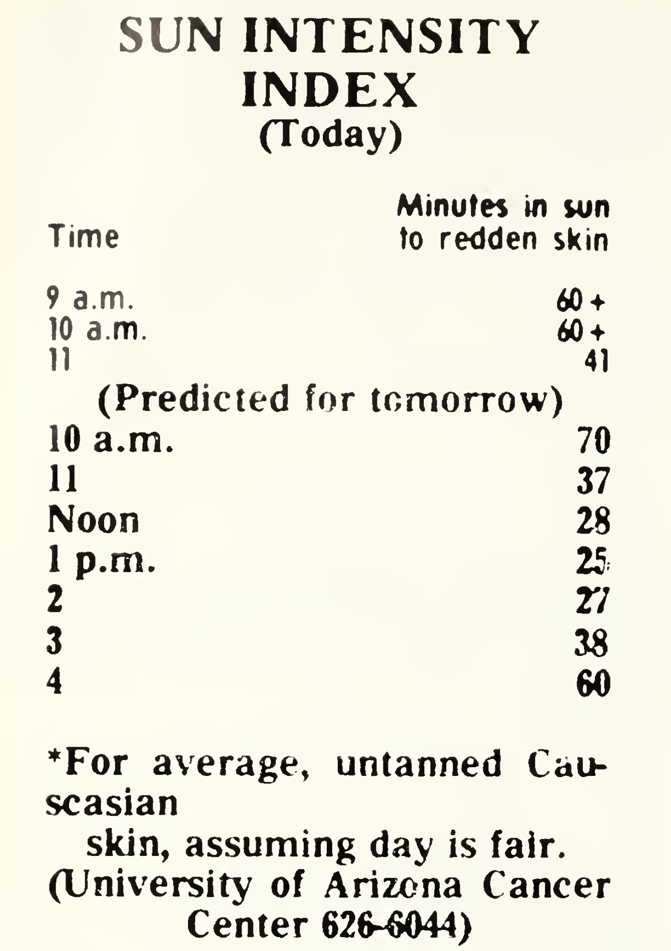


Figure 5
Daily average dose of SBU per month for six stations. (Reprinted with permission from: Photochem Photobiol, vol 35. Berger DS, Urbach F: A climatology of sunburning ultraviolet radiation 1982, Pergamon Press, Ltd., New York. Tucson added for comparison.)



SUN INTENSITY INDEX
(Today)

Time	Minutes in sun to redden skin
9 a.m.	60 +
10 a.m.	60 +
11	41
(Predicted for tomorrow)	
10 a.m.	70
11	37
Noon	28
1 p.m.	25
2	27
3	38
4	60

*For average, untanned Causcasian skin, assuming day is fair.
(University of Arizona Cancer Center 626-6044)

Figure 6
Example of the Sun intensity Index in the Tucson Citizen newspaper.

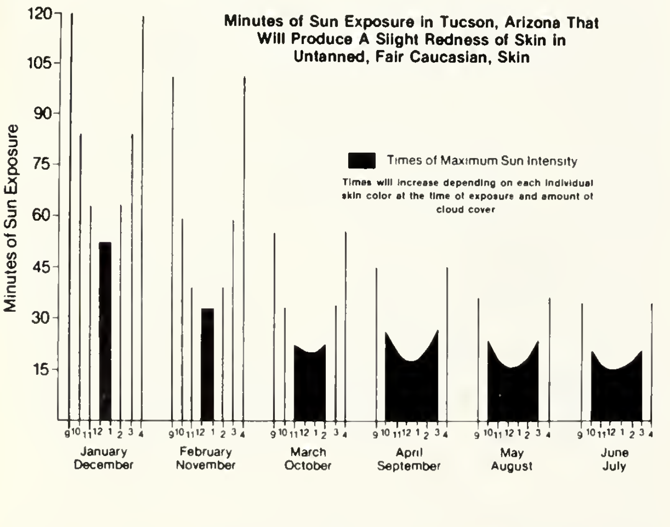


Figure 7
Example of the Tucson Citizen newspaper's publication (first day of each month) of the six-year average of Sun Intensity Index, by month and time of day.

the past six years' readings (Figure 7). Since we found minimal variations in the figures from year to year by month, this graph is reliable.

Due to the intense UVB radiation and the very high incidence of skin cancers in southern Arizona, we have presented information on those facts to the public over the past five years. Newspaper and television interviews and public forums have not been effective to date in altering the increasing incidence of skin cancers. Thus, we have embarked on this program furnishing more information to people in the high intensity of UVB radiation present in our area.

Our Sun Awareness Program also includes information on the selection and use of sunscreens as public service announcements to over thirty radio stations and information programs on these topics to children and newcomers in Arizona.

Evaluation of this program will be determined by estimating the degree of public knowledge related to skin cancer, sun intensity and sunscreens, and our future skin cancer incidence rates.

Acknowledgment

The authors would like to thank Dr. Frederick Urbach of Temple University School of Medicine for supplying the Robertson-Berger Sunburn meter.

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Psychiatric Disorders

The Nourishment of the Mind
Part 3—Pathos

William B. McGrath, M.D.

Editor:
Thomas E. Bittker, M.D.

We have been considering three important functions of the human mind: aversion to ugliness, appreciation of beauty and a capacity for pathos.

The first two, ugliness versus beauty, constitute a kind of elemental tropism. The mechanisms of attraction and repulsion are not reliably natural or inborn, however, and mankind will simply not survive unless aesthetics and good manners are reclaimed and rewarded and cherished.

The third item, pathos, is still shrouded in the mists of the summit or sublime. Above the timberline of commerce and the military, the best guide to pathos is the physician. He is supposed to be the paragon of pity. It is his profession (literally, to profess) to understand suffering and try to relieve it. Unlike the parent or teacher he has no equal share in the corresponding joys of his charges. Unlike the clergyman he makes no moral judgments.

Ideally any person, regardless of merit,* would take for granted the physician's profound and unselfish concern. This is a hallowed presumption, and one which we are just a bit hesitant to examine, lest it prove chimerical or no longer grounded in experience. Certainly the traditional trust of the medical profession is being pummeled by malpractice suits and cases of fraudulent and immoral behavior; and by emphasis on "informed consent"; and by the inciting of nurses and paraprofessionals and purse string agencies to make the doctor more accountable and keep him on the defensive.

God forbid that someday a patient or a stranger may routinely come to question the innocence of a doctor's care!

From: 4910 North 44th Street, Phoenix, Arizona 85018.

*The concept, agape, translated to mean unconditional love for one another, has been adopted by some religious denominations.

To what degree we are responsible for such a deteriorating state of affairs is not the subject of this inquiry. Neither can we afford to be sanctimonious about medical ethics; nor can we claim any monopoly on integrity or charity or virtue in general.

No, our main concern is with compassion and how we come by it and how we might then pass it on to others.

Is this important? If our sensibilities were not so nearly deadened, we'd hardly be able to stand the daily news. Weapons designed to be horribly mutilating are being stockpiled all over the globe. Terrorism and torture and kidnappings are an expected (if not accepted) feature of the politics of many nations. Hundreds of thousands of prisoners are locked into brutalities which we can't bear to imagine. Murder and rape are not decreasing. Women and children are no longer safe in their own homes or on neon-lighted streets. Most of you are too young to remember a documentary film, Mondo Cane, World of the Dog.

Other cruelties are more covert and hypocritical, but they pollute the atmosphere like acid rain. Rationalizing that the end justifies the means, the newspapers conspire with the police in publicizing the names and addresses of minor sexual transgressors, heedless of the disproportionately terrible consequences to their reputations and their families. The muckraking journalist tells us how sad he is to "have to" report malicious gossip about one of our idols or about a defenseless hero who is deceased. Imagine the impotent rage of the defendants in the blackmail and bearbaiting of divorce and "palimony" suits. People feel dread and resentment when those who have institutional power wield it so pitilessly and with self-righteousness. Pagan rites of human sacrifice, however misguided their purpose, at least had religious sanction and some kind of dignity.

Or we might broaden our desolate view to the commonplace. One of the first lessons we are taught, and never allowed to forget, is Caveat Emptor, Let the Buyer Beware. The echoing significance of the proverb is awful. It presumes that one of the parties to any transaction may try to cheat—and the prediction becomes an invitation to cheat or feel cheated.

Talk about stress! The psychological price, the paranoid nervousness of such pervasive distrust is incalculable. And how much more taxing it must be for the saleperson or serviceman to realize that we have no confidence in him, that he may try to earn our trust but probably can't. Caveat Emptor: No competitive advantage, no surplus of material gain can compensate the manufacturer or merchant or advertiser who lives by such cruddy standard and who assumes that we do, too.

Until something displaces that philosophy, that motivational orientation, any hope of reducing social and psychosomatic disease will still be misdirected and in vain.

The manifest remedy would appear to be to give higher priority not to profit but to peace of mind, especially as such devolves from being absolutel trustworthy—to oneself as well as to others. Yes, o course. Yet notice how hard it is to get our minds of ourselves! A sermon on homeostasis and the blessing o being pure of heart is egocentric and again begs the question of primary concern for others.

Unselfconsciousness is the first clue, the first adul step in the development of compassion. Even the dissecting of a cadaver in medical school begins to draw the attention of the student away from himself. In taking a history the doctor learns to ask questions about the patient; about the patient, and not about the impression he is making on the patient. Mirabile dictu! Most persons encountered elsewhere or introduced at a cocktail party will permit themselves a couple perfunctory inquiries and then predictably talk about themselves. Like children, they want to be noticed and hope to be liked. Sometimes they rationalize that they are too shy to show their curiosity about others, but shyness is still a symptom of self-centeredness.

One does have to have at least a little interest in others before one can feel concern. And that concern has to have some focus to be effective. Goethe's Weltschmerz, sorrow over the evils of the world, fails to relieve either the sorrow or the evil. Some of the people who carry banners in parades for "great causes" seem mainly to be posturing in the limelight. Public bewailing will not unseat the horsemen of the Apocalypse: famine, overpopulation, nuclear war.

Focus or concentration of concern calls for undivided attention. This, of course, is a corollary of unselfconsciousness. And it brings to mind another of those slogans which condense the sickening pap which is being spoon fed to the gullible and immature: "You have to sell yourself." Appropriate this might be to the performer or to the politician (who also sells promises). Nowadays the carefully casual costuming of the college professor indicates his need to be popular in order to be successful. The news reporter, even the weatherman, tries to be charming. In the Roman circus of the courtroom, the lawyer has come to rely on showmanship. These are all personifications of narcissism.

Books on popular psychology and How to Get Ahead and courses on salesmanship all propagate this childish notion that somehow by preening like a peacock one will win friends and influence people. A shocking preponderance of advertising plays on this one theme: Clothes make the man and this underwear or that perfume will ensure any woman's irresistible allure.

To mature individuals the whole idea of selling oneself is wrong and very demeaning. It is amusing at first and then almost terrifying to try to find one's way out of this hall of mirrors. Whenever we are drawing attention to ourselves we are blinded to the needs of others.

The other corollary or derivative of unselfconsciousness is singleness of purpose. We are contradicting ourselves when we refer to priorities in the matter of goals and motivations. Intelligence demands only one necessary and sufficient reason for any decision, for any decisive act. Everything else is secondary and practically irrelevant. And that one purpose (excepting one's simplest appetites) ought to be outside oneself, objective. The surgeon ties off the artery because it is bleeding—and for no other reason. The physician listens to someone else's heart and not his own!

A doctor who purchases expensive diagnostic equipment for its functional value, but partly with the thought of potential profit, will be tempted to pay for it by overutilization. Enriching himself on paper, he will yet cheapen himself where it really counts. He may hardly be aware that his divided intent has put him on the defensive.

To be on the defensive is never to be completely free.

Our puritan backgrounds prejudice us to conceive of personal freedom as disinhibition, as license to be bawdy and bad. Yet one has to have equally unrestrained freedom to be noble and compassionate.

The surest pilot to noblesse oblige is example. Professional schools and subsequent associations cannot teach formal courses on dedication and pathos. But they can provide examples. And it is example which sets us free!

How? A famous artist of my acquaintance will work many hours a day for weeks, reproducing in exact detail ust one feather of the bird he is sketching. This dancer or that musician practiced all day every day for months before performing in public.

Our demotic society, influenced by pubic psychologists, would pity the artist as a slave of neurotic perfectionism.

On the contrary! The artist is free; free of accountability, except to his muse; free of any need to sell or ingratiate himself; free of haste and competitiveness and compromising motives.

And his freedom becomes our inspiration. What he gives us, first, is an example to emulate. But inspiration has a subtler and more profound component. The successful perfectionist is giving us *permission*. Our minds work this way: If he has not lost his mind or brought down the wrath of God by working with such devotion, with such infinite attention to detail and with such lofty aim, then maybe we don't have to settle for inoffensive mediocrity.

The artist then can help us to be more wholehearted. So could the craftsman until the singleminded dedication of his guild was shattered on the brutal assembly line and ridiculed by the profiteers. Anyway, it is the wholeheartedness which is essential to pathos, moving us away from narcissism. But it still leaves out the sentient objects of our care.

The object of pity plays a transactional role in freeing or releasing the pity itself. To some extent the helplessness of the victim is an invitation to the helper, and this is especially applicable to the practice of medicine. It is more than verbally true that the patient creates the doctor, as the child creates the parent.

In all other areas, however, sympathy requires imagination, or else we'll turn away. Some conditions of mental and physical crippling can only make the onlooker feel helpless and inadequate and hence vaguely guilty and resentful and aversive. It would be well for families and helpers to understand such ambivalence and realize that it need not subtract from the sincerity of their devotion or contaminate their actual care.

We do have among us some Little Lord Fauntleroys who have experienced little or no deprivation or pain or abuse. They resemble some of the "upper classes" of the past or the bureaucrats of backward countries. As physicians, well fed and smug, they may seem constitutionally unable to "identify" or sympathize with the sufferer. They often compensate, and rather admirably, by taking real pride in their diagnostic acumen or their surgical skills.

Severe hardship, on the other hand, proves less likely to ennoble than to embitter, an attitude of getting even with the world.

Even the chromosomes and hypothetical hormones of nurturing furnish no guarantee of compassion: witness the battered child. The whole matter of pathos, in fact, does not lend itself to scientific quantification. Sorrow for the tenth cancer patient is surely not divided or diminished to ten percent. A lifetime of caring for persons who are troubled and hurting does not even begin to deplete one's sympathy.

Doctor John Donne (1573-1631), ecclesiastic, not physician, expressed it in oft-cannibalized lines:

"No man is an island, entire of itself; every man is a piece of the continent, a part of the main, if a clod be washed away by the sea, Europe is the less, as well as if a promontory were, as well as if a manor of thy friend or of thine own were; any man's death diminishes me, because I am involved in mankind; and therefore never send to know for whom the bell tolls; it tolls for thee."

In an earlier essay, entitled Landlord, we discussed the fundamental human need of shelter and the life-saving virtue of hospitality. "Wherever there are vestibules or waiting rooms of any kind, there are people who will die too soon if they are not somehow made to feel welcome in the world." Pathos is the gentle beckoning, the reaching out.

The physician is singularly blessed with the summons or call to compassion and the opportunity to practice it. He can be unselfconscious, which is the prerequisite to unselfishness. He can afford a singleness of purpose which is more elusive in the adversary system of the law or the competitive world of commerce. The physician hardly needs the imagination which is elsewhere essential to sympathy: He works with real flesh and blood and not with the shooting gallery silhouettes in the carnival called television. It is the duty of the physician to build a bridge of pathos over our deadly narcissism and by example to set others free to follow.

Radiology

Case of the Month No. 66

Jack Bodker, M.D.
Robert E. Stejskal, M.D.

Editors:
Jonathan M. Levy, M.D.
Janice Rice, M.D.

A 59-year-old female underwent radical right pneumonectomy with partial pericardiectomy for lung carcinoma, which had invaded the right upper lobe bronchus and had infiltrated the pericardium. Several hours postop, the patient developed hypotension, tachycardia, marked jugular venous distension, and marked facial cyanosis. An AP portable radiograph was immediately obtained (Figure 1).

What is your diagnosis?

What is the treatment?

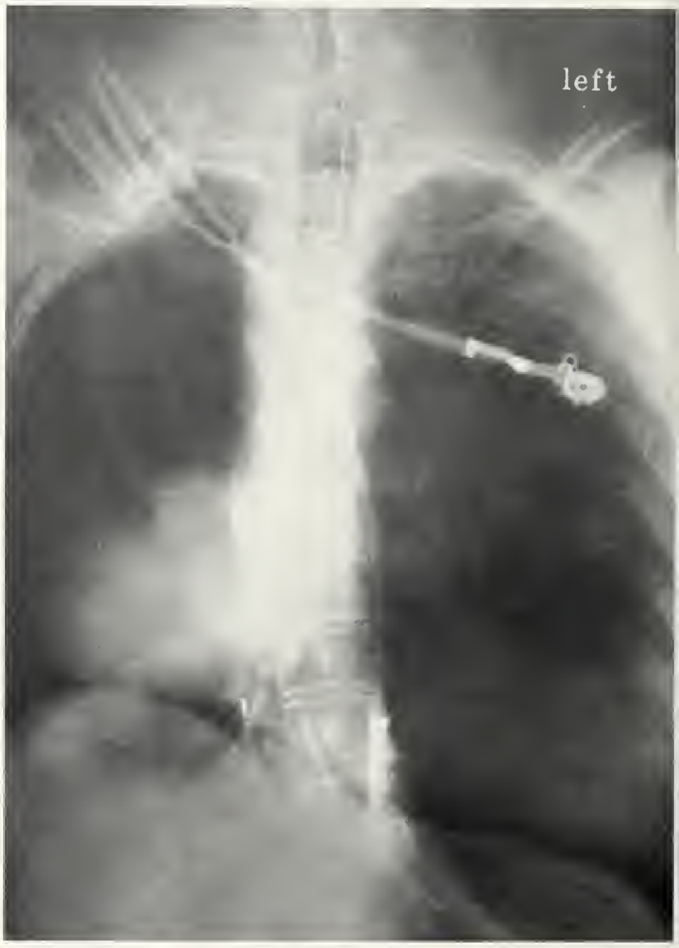

Figure 1

Continued on page 481

From: The Department of Radiology, St. Joseph's Hospital, Phoenix, Arizona 85013.

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"I Can Get It For You Wholesale" or PPO's, Are They The Answer?

Health care costs are the major topic of discussion wherever one goes these days. At cocktail parties, doctor lounges, on the radio and television the word is out that we must somehow decrease the costs of medical care.

Prior attempts at limiting medical care costs have involved the use of Independent Practice Associations (IPA's), Health Maintenance Organizations (HMO's), and Medical Foundations for Health Care. These groups have attempted to limit *unnecessary* medical procedures through careful prospective review and financial incentive to participating physicians and patients. These plans have decreased hospital utilization which has greatly reduced their ultimate cost.

The formation of Preferred Provider Organizations (PPO's) will now add a new twist by offering discounted prices for physician services to selected employee groups in return for an increasing volume of patients. Contracting with hospitals for lower rates, these groups propose to decrease the ultimate expenditures industry will have to make for health care benefits. Employers see this as a way to decrease their costs, but hospitals are in a bit of a quandary. They want to make certain that the PPO's send their patients to their hospital, and are thus aligning themselves with such groups, however, PPO's to be effective need to limit hospital usage and are thus resisting strong affiliations with any one institution. Thus, PPO's will be utilizing not only discounted rates, but also some form of screening for unnecessary services to reduce health care costs.

Society, although initially getting a reduction in their costs for health care through the utilization of these various practice modes, will begin to see prices creep back to where they started, and then beyond, as health care costs continue to rise due to the use of increasingly expensive technology and increasing number of providers. What is society then to do? There appears to me to be only one answer and that is to limit access to *necessary* services. By putting a limit on the patients', the physicians' and the hospitals' ability to order necessary medical services, health care costs can be controlled. Politically this is an extremely sensitive issue which will entail ethical decisions which society as a whole is not yet ready to accept. Although HMO's, IPA's and Foundations have been making these decisions informally, it is going to become increasingly difficult to decide who should have vascular reconstructive surgery at a cost of $10,000 versus an amputation for a quarter of the cost in treating a diabetic foot ulcer. Does a 75-year-old gentlemen with angina require coronary arteriography and coronary bypass surgery or conservative medical therapy?

These kinds of decisions are going to have to be made if we are to suppress the rise in health care costs. As physicians we are going to have to be involved in all three approaches, decreasing costs per service, decreasing unnecessary services, and ultimately, rationing of medical care by limiting access to necessary services. The latter is the most difficult one with which we are faced. We are now just into the "I can get it for you wholesale" phase of the PPO's. Unfortunately, PPO's will not be the answer, but they perhaps will help us control health care costs temporarily, which will give society the breathing room necessary to consider the next most important step, the rationing of necessary medical services.

Marshall B. Block, M.D.
Editor

The Elephant Graveyard

Few of us prepare to die. While our minds well accept death, few plans are made which legally or financially assure that the dying experience will occur smoothly. Hence, among the many areas in which the medical profession finds itself in conflict is the free choice to die and/or the method of dying. Because of high technology, high costs, and the heroic episodes that center around death in a hospital, physicians are often accused of adding a psychological and a financial burden to the dying process. Surely this accusation has truth to it. On the other hand, physicians have a commitment to preservation of life and the application of the best of medical knowledge. It is not surprising, therefore, that patient and family needs may well come into conflict with the goals of health professionals.

As an educator, I have frequently been asked why more isn't taught about dying in medical schools. The intent of the question invariably is accusatory and hostile because of some recent personal experience with death. In each of these conversations there is more to the question than what goes on in medical education. Quite frequently in the discussion the ambivalence of the questioner surfaces in response to the question, "Why do you involve the physician at all." The usual response states there was some treatable event during the course of the dying process.

Other answers, however, are more challenging and give clues to the direction in which this conflict can be resolved. One response might be that the physician must sign the death certificate. Another might have to do with the reimbursement from insurance carriers for some costs which require physician input if they are to be claimed. Another answer is the need for a prescription drug to comfort the dying. Hence, the patient, family, and friends find themselves in the jaws of conflicting systems.

Surely one can make a case for an individual's free choice to live or die. At the present time, there are complex philosophical, theological, ethical, and legal issues involved. To assure that the educational process for medical students includes these issues, the course in Human Behavior and Development includes a number of sessions on dying and all of its permutations.

However, neither the College of Medicine nor its faculty has embarked on leadership to correct or narrow the areas of conflict. It is unlikely that physicians will take the sole leadership role in this arena, because of the strong commitment to preserve life. More appropriately society, at its most fundamental levels of moral thinking, should generate the energy to change the system. Among the possible solutions would be a set of laws, guidelines, and principles which would allow humans to behave as lesser mammals who separate themselves from the "tribe" when death is imminent. The hospice concept does address this issue to a degree but it too has to struggle with the problems of cost, laws, and ethics.

In my view, public dialogue is most needed—dialogue to deal with how much influence or authority rests with the individual, the family, the physician, the spiritual advisor, and the community. Thoughtful input from health professionals, theologians, legal experts, and the health care industry is required. Perhaps the outcome will be humankind's equivalent to a legally protected elephant's graveyard.

Louis J. Kettel, M.D., Dean
University of Arizona
College of Medicine

Times of Challenge and Opportunity

Daniel T. Cloud, M.D.

The 27th Annual Walter L. Bierring Lecture was delivered at the annual dinner, Federation of State Medical Boards of the United States, New Orleans, Louisiana, May 14, 1982.

Dr. Cloud was the 136th president of the American Medical Association.

There is no question that this decade of the eighties may be the most exciting in the history of our great country. We will see a political, economic, and social renaissance that is beyond belief. Our country is clearly at another major crossroad, and we are going to need a special kind of courage and resolve to decide which path to take.

Some fifty years ago, during Dr. Bierring's time, our country implemented a series of sweeping social reforms in response to the desperate need of a nation that was gripped in a paralyzing depression, with unemployment, hunger, bread lines, homelessness, sickness, epidemics, and even suicide. These reforms included such things as Social Security, unemployment programs, and a vast array of welfare programs. Some seventeen years ago Medicare and Medicaid were enacted as entitlements. They have expanded massively over the years. And accompanying these programs has been ever-increasing, excessive government regulation. This regulation also begets more regulation, and we have wound up with regulation for the sake of regulation.

In the ensuing years we had World War II wherein the first nuclear explosion occurred, the Korean War, and Vietnam. We had the development of nuclear weaponry as we know it and escalation of nuclear power as a result of the action-reaction phenomenon of world politics. Through all of this, health care for Americans has evolved in a stunning way, and we now have the greatest health care system in the world, the greatest system in the history of mankind. We can do more for more people than in the wildest dreams of our medical forefathers just fifty years ago. We have had a stunning increase in longevity, the quality of life, and the productivity of our citizenry.

In the meantime the politics of medicine has increase its tempo remarkedly. In 1948, in response to the spectre of socialized medicine which was coming down on this country, the American Medical Association (AMA) first assessed its membership $25.00 to develop a public relations campaign to counter socialized medicine. Previously the AMA had operated as a scientific and educational institution, with little concern about legislative and political activity.

At that time AMA leaders felt this spectre threatened our freedom and our professionalism, and they reacted affirmatively. They launched legislative and public relations activities for all of the profession based upon what we now refer to as the umbrella concept of the American Medical Association in representing all of the profession, and I emphasize to you that representation of physicians is our primary function.

Many of the social programs of the federal government moved well beyond that envisioned by their creators. The entitlement programs, especially Social Security, Medicare, and Medicaid, produced expenditures well beyond original projections. We have a growing population, a rapid increase in our elderly, and enormous expenditures for defense. We have a country with tremendous capabilities, vast responsibilities, a free country, the greatest health care ever, and suddenly we have trouble paying the bill.

We are beset by a national economic crisis which has complicated the health care situation. In the 1980 national election we saw a broad political ideologic reversal, or so it appears, and we now have a new administration headed by President Reagan. Now we are in the agony of economic recovery, and medicine is affected by this like anyone else.

The American Medical Association, in response to President Reagan's call for economic recovery, responded affirmatively. We pledged our support for his goals. At the same time we reserved the right to speak out affirmatively whenever we believed that any government program would in some way impair the quality and accessibility of care to which every citizen of this country is entitled.

There is no question that the cost of health care is the number one issue before us today; for every citizen, and for every physician. Let me give you just a few specifics which might be of interest. In 1980 our total health care expenditures were $247 billion. That was 9.4 percent of our gross national product, an increase of 15.2 percent over the previous year, and the greatest increase in health expenditures in more than fifteen years. Hospital costs were 42 percent, physicians' fees 18 percent, and, interestingly, physicians' orders in the hospitals for treatment and medication are said to account for 50 percent of the total hospital expenditures. This is an indication that physicians have great responsibility for the cost of medical care, even though physicians' fees are less than one-fifth of total expenditures. The rise in costs is 60 percent attributable to price inflation, 30 percent attributable to increases in demand for care, and 10 percent to the increase in population. Technology in particular is a major reason for increased costs.

It's interesting that since 1965, when Medicare and Medicaid were enacted, the federal share of total health care expenditures has grown from about 26 percent to 42 percent. This partly accounts for the concern by politicians that we are spending too much money.

President Reagan's budget proposals on health care are now being debated. We expect to see a reduction in funding for Medicare, Medicaid, PSRO's health planning, and HMO's. and we have seen proposals which will shift some health care funding back to the states in the form of block grants.

Medical education has been hard hit. Student loans are fewer, more expensive, and harder to get. Funds for research have been reduced. As a result, some young physicians who might choose research as their life work are shifting to other pursuits because of uncertainty of funding.

The federal share of financial support for medical schools in the decade between 1969 and 1979 fell almost 30 percent, from 59 percent to 28 percent. Many of our schools are in financial trouble. We have 126 medical schools, and I understand that several have to close their doors during this decade. That seems impossible, but then I didn't think that Braniff Airlines could capsize either, until I saw about four dozen of their colorful planes sitting in what looks like a World War II graveyard at the Dallas airport. That is hard reality!

The cost of medical education has increased dramatically. The debt that young medical students have when they complete their training is much higher than it has ever been, and the cost of starting practice is enormous. This is having a great effect upon health manpower, and upon physician distribution.

Manpower concerns are very real. Irrespective of whether you believe the GMENAC Report, it is clear that there has been a substantial increase in the number of physicians. There is increasing competition between physicians, which is healthy. There also is increasing competition between hospitals, which is also healthy. And there have been increases in the numbers of other health professional who are competing in the health care marketplace. Such developments are being carefully monitored by the American Medical Association.

There has never been a greater or more compelling need for all elements of medicine to be unified. The Federation of State Medical Boards is truly a staunch member of the family of medicine, and we need your support. The things I have described to you affect all of us, and certainly affect all of our patients.

Our medical profession is the greatest profession in the world, and we have the greatest health care system in the world. We have made remarkable advances, and in this decade we will see many more. The artificial heart will become available for some 35,000 to 45,000 possible candidates within three to four years. It will cost upwards of $100,000 to install each artificial heart and maintain it for one year. That will be a formidable challenge in logistics, finances, and community planning.

A new family of antibiotics; new chemotherapeutic agents; human insulin as opposed to animal insulin; programs of prevention; programs to monitor and prevent the sudden infant death syndrome, SIDs, which now claims 10,000 infant lives a year will come along. Some are less dramatic than the artificial heart, but they are all important, and all will improve the quality of care. But they are all expensive. What has the American Medical Association done to address the cost issue? Well, we are enormously concerned about cost, as is every physician, and our basic position is that cost containment must not sacrifice quality or availability of the care that we now provide. That's a big order.

In 1975, we sponsored the National Commission on the Cost of Medical Care which took a good, hard look at costs. This Commission had broad representation from government, education, medicine, labor, business, and the public. They produced a monumental report which has generated a great deal of activity.

The Voluntary Effort (VE) was established in 1978 by the American Medical Association in conjunction with the American Hospital Association and the Federation of American Hospitals. The VE focused on cost awareness and set a series of goals for voluntary cost containment. The VE initially saved money and will continue to enhance cost awareness.

We now have another project which I would like to discuss with you in some detail, and that's the development of local health care coalitions. Coalitions are important in cost containment. I believe they will be able to address cost issues with a significant degree of effectiveness at the local level. A national coalition was created last January by the American Medical Association, Blue Cross/Blue Shield, the American Hospital Association, the Health Insurance Association of America, the AFL-CIO, and the Business Roundtable, organizations whose members all have a stake in medical costs.

Now what we need—and I urge you to participate in this—is the development of coalitions at the local level. Each coalition, to function effectively, must do two things: it must identify the special needs of its own community and work to meet these needs, and it must fully represent medicine, hospitals, business, labor, and insurance. If you do not have doctors seated at these coalition tables—and there are a number of business coalitions around the country who do not—then you will not be able to address the basic concern I mentioned—the preservation of the quality and the availability of care. To reiterate, it's essential that coalitions be formed locally, and that they have physician representation.

And finally, there is another program near and dear to my heart: *prevention,* the preservation of wellness. And I ask you to join with me in a crusade for wellness in this country. Prevention is the area where the greatest opportunity for better public health and simultaneous cost savings lies. Illnesses and injuries that result from preventable accidents, and from smoking, drinking, overeating, and other lifestyle aberrations, are costly both in dollars and in health.

According to federal estimates, approximately one-half of the nation's total health care expenditures are paid for preventable illnesses. That means that in 1980, more than $123 billion in national health expenditures were potentially avoidable. So here is a unique opportunity to make not one, but two significant advances: substantially enhance the well-being and quality of life of our citizens, and substantially reduce national health expenditures.

Regulation, as I mentioned earlier, has become a significant and sometimes deplorable aspect of our lives. We have a complex society, and every complex society requires regulations. We in medicine have fought excessive government regulations for years, and have resisted regulatory solutions to professional issues. We have sought voluntary solutions to our challenges in lieu of the imposition of governmental regulations.

We do have an obligation to set standards for medical education, undergraduate, graduate, continuing medical education, for peer review, and for hospital accreditation. But I want to point out that sometimes there is danger of excessive self-regulation which can be as destructive as excessive government regulation.

One example of this is the Joint Commission on Accreditation of Hospitals. I have been a Commissioner on that Board for several years now, representing the American Medical Association. It is quite clear that we do overregulate from time to time in our zeal to assure that hospitals are properly accredited and meet high standards. I suspect that there is not a physician in this room who hasn't occasionally been irritated by the Joint Commission.

In any event, we do have to regulate ourselves, and if we fail, we will be regulated by government. I should emphasize that our self-regulation should be reasonable and not oppressive or excessive.

Manpower, as I mentioned a moment ago, is also an important concern of the American Medical Association. Our policy was approved by our House of Delegates last December in the form of a major manpower report. We believe that medical manpower problems will best be addressed by letting the free market forces operate in a normal way. We are opposed to any form of regulatory solution to manpower problems. For example, we should not try to prescribe by regulations the number of students in medical schools, or the number of specialties, or where physicians practice.

The free market forces will settle those matters quite effectively. We now see evidence that, in view of the great cost of starting practice, medical students are paying much greater personal attention to where they are going to practice, what specialty they might enter, and their opportunities for success. I believe these forces are working effectively.

In the context of all I have said, and in this time of great challenge, I would like to give you the AMA's viewpoint on some special items.

I might suggest that you think of licensure and peer review as one subject. They are not exactly the same, but as I see it, if peer review and licensure don't work hand in hand, neither will be properly effective. I believe it's important to blend licensure and peer review. Let me explain what I mean.

Licensure deals with just that, and you people are the authority. Peer review, however, picks up the concerns related to quality assurance. After the physician is licensed and is in practice, peer review comes into play. And the American Medical Association believes that we should implement more extensive statewide voluntary peer review programs. Peer review will work, in my opinion, as long as the physicians who are involved in it wish to have it work. That is, it requires voluntary compliance.

Peer review breaks down when the authority behind the peer review fails, and that's where I think licensure and the licensing boards come in.

Those of you who sit on licensing boards do not carry out peer review. That's a day-to-day concern in the hospitals. But licensure must reinforce peer review, blend with it, and lend authority. I urge you to take the necessary steps to bring that about.

In Arizona, we have the means to report faulty physicians to the medical licensure board. We are able to do this in a reasonable way through various mechanisms. But if we don't have the backing of our board of medical examiners, and if the board doesn't have input from the peer review mechanisms, protection for the public will fail.

There are realistic limits to licensure, and there are realistic limits to peer review. I believe that by dovetailing our efforts we can bring about a realistic program to maintain quality, which we must do to prevent further government intrusion into our affairs.

I am going to briefly discuss a serious concern we have over the FLEX I-FLEX II proposals. I know that Dr. Boyle, the chairman of our board of trustees, addressed this issue this morning. But I would like to give you my perspective. I believe your goal is laudable, and that it's terribly important to have full cooperation between all elements in the family of medicine. Several years ago, when the AMA implemented a revision of our continuing medical education program, we found that we made some mistakes, and we had to remedy them. I suggest that there are some serious problems about FLEX I-FLEX II that can solve if you address them collectively with the other elements in medicine who have a deep interest in what you are doing. And I urge you to do that because I do applaud your goal.

I believe it's important that all of us in medicine understand that your proposal is acceptable and useful, and that it does exemplify what we are all trying to do.

Finally, I would like to return to my basic theme this evening, which is a call for unity within our great profession. All of us in medicine, working together in warm friendship, can avoid parochialism and tunnel vision. The years ahead will not be easy years, but they can be great years. They will present great challenges and even greater opportunities, and we in our great profession have the strength to meet those challenges. I salute you as important members of the family of medicine. I am greatly honored to be here with you tonight, and I wish you well in this wonderful meeting. Thank you.

American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

Arizona
Medicine

Editor
Marshall B. Block, M.D.

Associate Editors
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Answer:
Cardiac Herniation with Volvulus

A grave potential complication of pneumonectomy with partial pericardiectomy is herniation of the heart through the pericardial defect. More than forty cases of acute postoperative cardiac herniation have been reported to date. Most of these were in patients having pneumonectomy or lobectomy for carcinoma of the lung. Clinically, the patients presented with: 1) Severe circulatory shock secondary to low output failure and/or, 2) acute superior vena cava syndrome with jugular venous distension and cyanosis of the face and neck. Acute cardiac herniation usually occurs within the first three postoperative days.

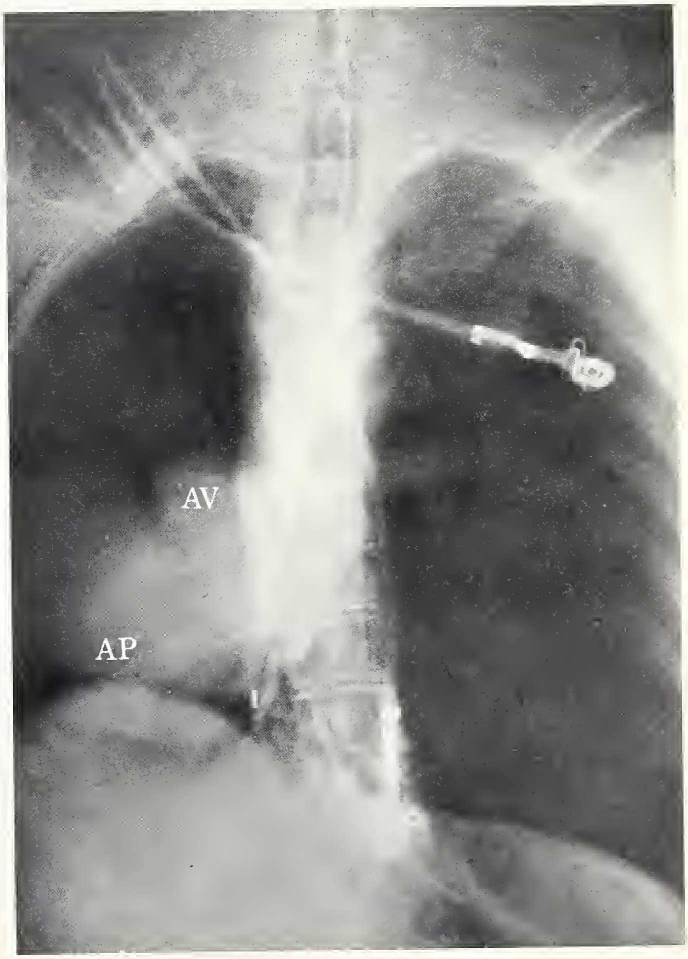

Figure 2
Cardiac Herniation

In the clinical setting of progressing postoperative shock, more common entities such as cardiac arrest, airway obstruction, arrhythmias, myocardial infarction, pulmonary embolus and intrathoracic or mediastinal hemorrhage should be considered. Identification of the cardiac herniation on a chest radiograph allows prompt surgical correction. Most commonly, right sided cardiac herniation is accompanied by volvulus of the heart, torsion of the atriocaval junction, and right ventricular outflow obstruction. Figure 2 shows the heart to be herniated into the right hemithorax with the cardiac apex (AP) projected toward the right. There is distension of the azygos vein (AV) reflecting superior vena caval obstruction. The aortic arch remains on the left.

Uncorrected acute postoperative cardiac herniation is lethal, while mortality rate can still be as high as 40% to 50% even if the entity is promptly recognized. Complete cardiac herniation has a better prognosis than partial herniation, because of the cardiac incarceration and resultant myocardial ischemia which occurs in the latter.

In this case, the patient was taken immediately to the operating room, and the heart quickly repositioned in the pericardial sac. The rent in the pericardium was sealed with a Teflon baffle. A thrombus was found in the superior vena cava, and this was removed. The patient had a satisfactory convalescence, and was discharged after two weeks.

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3. Tschersich HU, Skorapa V, Fleming WH: Acute cardiac herniation following pneumonectomy. *Radiology* 1976;120:546.

Briefly Noted

Merlin K. DuVal, M.D., Phoenix, received one of four Distinguished Action in Health Awards, presented jointly by the State Health Planning Advisory Council and the Statewide Health Coordinating Council. According to **Louis J. Kettel, M.D.**, Chairman of both councils, the awards are presented to "recognize the many efforts that outstanding individuals have made toward health services and planning in Arizona." **D. W. Melick, M.D.**, Phoenix, received his Distinguished Action in Health Award last March.

Samuel Goldfein, M.D., Tucson, has been elected president of the Southern Arizona Division of the American Heart Association.

Schuyler V. Hilts, M.D., chief of nuclear medicine at Tucson Medical Center, is the new president-elect of the American College of Nuclear Physicians. Dr. Hilts, chief of nuclear medicine at Tucson Medical Center for 24 years, will begin his term as president next February.

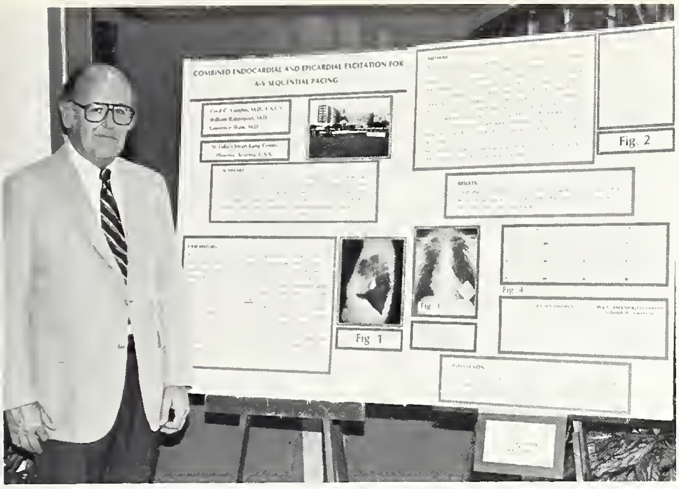
Jerome J. Kastrul, M.D., chairman, Medical Advisory Committee to the Gerontology Program at St. Luke's Hospital, Phoenix, addressed leaders of groups for the aged at a recent Gerontology luncheon at St. Luke's.

Don Val Langston, M.D., Phoenix, has been appointed to the National Advisory Council on Maternal, Infant and Fetal Nutrition. He is the only pediatrician serving on the 21-member council. The council, which reports directly to President Reagan, is engaged in a continuing study of the Special Supplemental Food Program for Women, Infants and Children (WIC) which helps eligible pregnant women, nursing mothers and children maintain adequate nutrition. In 1982, 2.1 million participants received help under the WIC program.

David Long, M.D., was elected president of the American Heart Association, Maricopa Division. Dr. Long succeeds **Michael Vawter, M.D.**, as president of the affiliate. **Arthur Lipschultz, M.D.**, was elected to the vice presidency.

Robert Tidwell, M.D., medical director of the Clinica Adelante in El Mirage, was profiled recently in the *Sun City News and Sun*.

Cecil C. Vaughan, M.D., chairman of the Department of Cardiovascular and Thoracic Surgery, Heart Lung Center,


COMBINED ENDOCARDIAL AND EPICARDIAL EXCITATION FOR A-V SEQUENTIAL PACING
Fig 1
Fig. 2
Fig. 4

Cecil Vaughan, M.D., Phoenix.

St. Luke's Hospital in Phoenix, presented "Combined Endocardial and Epicardial Excitation for A-V Sequential Pacing" in poster sessions at the Seventh World Congress of Cardiac Pacing, in Vienna, Austria. The paper was coauthored by William Rappoport, M.D., and Larry Shaw, M.D. Dr. Vaughn was also a guest lecturer at the University of Vienna.

David Winston, M.D., Phoenix, spoke on "Fad Diets" during the May Brown Bag Lunch program presented by Camelback Hospital's new Northeast Center.

Mark Wyse, M.D., Phoenix, was guest speaker at the May Health Talk Forum presented by the Arizona Medical Association and Blue Cross/Blue Shield of Arizona. Dr. Wyse advised his audience about "Getting Ready for Summer."

Cochise County

Dwight D. Wensel, M.D.
General Practice
108 Arizona Street, Bisbee
Kansas City College
of Osteopathy—1963

Maricopa County

Robert L. Baron, M.D.
Family Practice
1033 East McDowell Road,
EM Center, Phoenix
New York School of Medicine
at Buffalo—1979
Aldemir T. Coelho, M.D.
Cardiovascular Surgery
909 East Brill, Phoenix
University Federal De
Pernamburg, Brazil—1967
Judith C. Engelman, M.D.
Psychiatry
Mental Health Center,
P.O. Box 2071, Phoenix
Case Western Reserve—1978
H. Alex Favelukes, M.D.
Radiology
13214 North Third Way, Phoenix
University of Buenos Aires—1973
William V. Gaul, M.D.
Cardiology
13660 North 94th Drive, Peoria
Loyola University of Chicago
Stritch School of Medicine—1974
Alan P. Goldstein, M.D.
Pathology
Damon Laboratories,
210 North 24th Street, Phoenix
University of Miami—1976
Anthony K. Hedley, M.D.
Surgery
333 East Virginia, Phoenix
University of Witwatersrand—1968
Daniel Hirschi, M.D.
Pediatrics
13239 Gaucho Drive, Sun City
Scottish Conjoint Board—1940
Unen Du Hsu, M.D.
Internal Medicine
515 West Buckeye Road, Phoenix
National Taiwan University,
China—1968
Mahnaz Kassai, M.D.
Family Practice
20 West Juniper, Gilbert
Lady Hardinge Medical
College—1976
Douglas W. Kelly, M.D.
Orthopedic Surgery
2023 West Bethany Home Road, Phoenix
University of Arizona—1975
Peter Maki, M.D.
Cardiology
4616 North 51st Avenue, Phoenix
University of Arizona—1976
Eugene F. O'Riordan, M.D.
Anesthesiology
11419 North 56th Street, Scottsdale
National University, Cork,
Ireland—1951
Apichan Pootrakul, M.D.
Neurology
13660 North 94th Drive, Peoria
Chulalongkorn Hospital,
Thailand—1971
K. Joe Reid, M.D.
Radiology
444 West Osborn Road, Phoenix
University of Tennessee—1975
Tawfik H. Rizkallah, M.D.
Obstetrics and Gynecology
2320 North Third Street, Phoenix
University of Alexandria,
Egypt—1957
William Silverstein, M.D.
Radiology
444 West Osborn Road, Phoenix
University of Arizona—1975
Michael V. Vance, M.D.
Emergency Medicine
525 North 18th Street, Phoenix
University of Kansas—1972

Pima County

Lavell Ford, M.D.
General Practice
9887 North Hacienda Hermosa Drive,
Tucson
University Autonoma De
Guadalajara, Mexico—1973
Barry Turner, M.D.
Orthopedics Surgery
640 North Alvernon, Tucson
University of Nebraska—1971
Susan Wishnok, M.D.
Radiology
2022 East Mobil, Tucson
Boston University—1976

The faculty, Current Perspectives VII, Drug and Alcohol Abuse, presented during ArMA's 92nd Annual Meeting in Tucson: B. Ross Landess, M.D.; Michael E. Brennan, M.D.; Thomas E. Bittker, M.D., moderator; and Glenn Lippman, M.D.

Medical History

The California-Arizona Maneuver Area World War II
Some Medical and Nonmedical Notes About this Desert Training Center—1942-1944
Part I

John W. Kennedy, M.D.

Those of you who are history buffs World War II type, must have been somewhat amazed at the lack of reference to the medical experiences encountered in the widespread Army maneuvers of that era. Unit histories have very little about it, and perhaps rightfully so, dwelling upon the heroism and bravery exhibited by the members of their unit in closing in on the dreaded enemy in the European and Pacific Theaters.

The California-Arizona Maneuver Area (C-AMA) was located up and down the Colorado River on both the Arizona and California sides. We have abbreviated some of the findings noted in the official history of the area published by the Army Ground Forces Historical Section, supplemented by corresponding with over a hundred surviving veterans of that place and time.[1]

The War Plans Division of the War Department, General Staff believed that the campaign in North Africa, like those that had taken place in Norway, Albania, and Crete had proved conclusively the necessity for troops, especially organized, trained and equipped to operate on difficult terrain. The War Plans Division therefore recommended that the troops be trained in desert warfare and this was approved by Lt. Gen. Wesley J. McNair, Chief of Staff, General Headquarters, on February 5, 1942.[1]

On March 7, 1942, General George S. Patton, Jr. arrived by airplane at March Field, California, with a staff to reconnoiter the area from the ground and air. General Patton thought this the greatest area possible and foresaw that the numerous mountain chains, the very nature of the soil, the presence of considerable vegetation in some sections, all of this rendered the area suitable not only for the armored combat service but also practically all forms of combat exercise. Patton grew up in California and was no stranger to the terrain.

The site varied from desert floor to mountains 7000 feet high, the desert was hot in summer, but in the winter was cold, it suffered from sandstorms and cloudbursts although the total rainfall was seldom over five inches a year. The area supported no great center of population, and some Army Camps had already been established in the area. A Field Artillery area south of Indio, an Ordinance Section of Camp Seeley, and the Engineer Board Desert Test Section at Yuma and later at Thermal. An Army Air Base at Victorville, the San Bernardino Air Depot at San Bernardino, Camp Haan at Riverside, an Army Air Base at March Field, Camp Irwin at Barstow, a Holding and Reconsignment Depot at Yermo and an Army Air Base at Las Vegas. General Patton was instructed to train under realistic conditions, without frills and this included special features of hygiene, sanitation, and first aid.[1]

The eventual land mass area was subsequently known as areas A, B, and C, these were tremendous in extent. Area A was the largest and principally on the California side. It began at Yuma, followed the Colorado River as its eastern border until it reached just above Needles. It took in the tip of Nevada as far as Tatem and Searchlight where it turned to the west and came down on the California side to Nipton, Kelso to the west and Cadiz and Desert Center. But not as far to the west and south as Indio, cutting rather sharply south almost to Nyland, avoiding the Salton Sea, then curved around to Yuma so that it was an oblong area of approximately 10,130 square miles.

Area B was added soon, bordered on its western boundary by the Colorado River, was situated entirely in Arizona. It began at Yuma, went up to the east paralleling the Gila River to a point at about Gila Bend the sharply north skirting Prescott, staying well to the west of Prescott then back to the Colorado River. Area B encompassed about 6,251 square miles.

There was a smaller area designated Area C starting at Topock on the Colorado River, ran east to Yucca on the Arizona side, skirted Kingman and Chloride then joined the Colorado River below Searchlight. Its western boundary was the Colorado River down as far as Topock. This area was approximately 1,500 square miles. The total maneuver area was roughly 100 by 200 miles in size.[1] (Figure 1-2).

Assigned Strength of C-AMA

On April 30, 1942, at the time of the official opening of the camp, there were twenty officers present and were the total strength of the site.

From then on it built up fairly rapidly. On December 31, 1942, there were 4,115 officers, 40 flight officers, 48 nurses and hospital dieticians, 70,331 enlisted men for a total of 74,784 present for duty. May 1943 through December 1943 appears to have been the time of greatest activity. For instance December 30, 1943, there were 10,615 officers, 469 flight officers, 617 nurses and hospital dieticians, 163,230 enlisted personnel for a total of 174,931 in the area.

But in 1943 things began to wind down and at the time the camp closed on April 30, 1944, there was 490 officers, 21 flight officers, 68 nurses and hospital attendants, 9,161 enlisted personnel for a total of 9,740.

The initial mass division maneuvers were scheduled to begin August 31, 1942. But already there had begun the withdrawal of units from the Center for deployment overseas, especially to the North African Campaign and General Patton had already departed. Here it must be noted that as you read the official historial accounts and the experiences of the men who served in the area, General Patton may have been present for a short period of time, but his imprint on the training methods and the conduct of maneuvers remained throughout the existence of the training area.

Those of you who have partaken of exercises in which you were forced to take evasive action because of an air strike will get a chuckle from this. During one of the early maneuvers an observer wrote, "At VII Corps Headquarters a complete officers mess for about 50 officers with the cookhouse, stood completely in the open about 50 yards from the Commanding General's mobile office. The shining silver could have been seen for miles. The reporter was struck by the rather casual attitude of the senior officers in the matter." Well this raised some hackles back at the War Department. Obviously Patton wasn't present when this sort of thing took place. A further note on these exercises stated, "Army Ground Forces had harped unceasingly upon passive air defense but the results were continually

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From: 705 East Tuckey Lane, Phoenix, Arizona 85014.

inadequate. After some two years of effort along this line, I am beginning to feel that it will take a red hot battle to do the trick, I trust the cost will not be too heavy." Now this is a quotation from General McNair and it may have been a sort of premonition on his part. You will recall that General McNair lost his life in Normandy because of a short air drop by the American Air Force Bombing Squadron. There was a rule in Normandy that went something like this. When the RAF did a tactical ground close support bombing run, the Germans took cover, when the Luftwaffe made a run the British and Americans took cover and the American Air Force made a bomb run, everybody took cover!

Trials and Tribulations

These are grouped under three main headings by the official historian. To begin with the Center was an innovation. Not only was it designed for desert maneuvers but also to provide pre- and post-maneuver training, for the testing of material, tactics and techniques, and a promise from its inception to be more than a temporary expedient.[1]

In the second place it was a war baby and instead of precise preplanning it sort of grew like Topsy. There were always major shortages in certain types of service personnel and units, and this factor grew more and more critical as service units proceeded overseas, leaving no one behind to service the incoming maneuver troops. (By service troops is meant quartermasters, ordinance, medical, all the other ancillary personnel who supplied food, water, maintained vehicles, and all the other necessary housekeeping duties to keep a large body of troops in the field.)

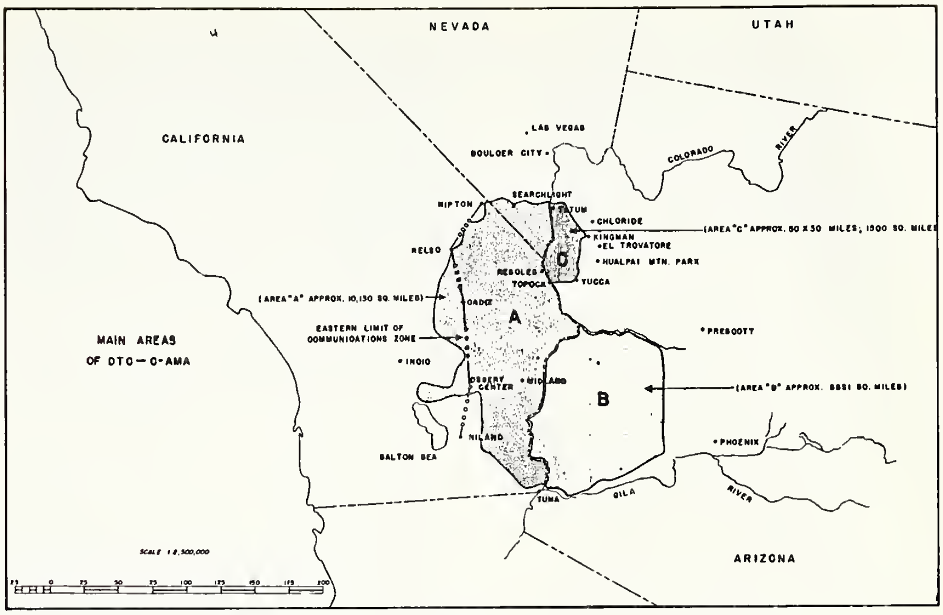

Figure 1
Map of main areas of Desert Training Center from Study 15, U.S. Army Historical Section.

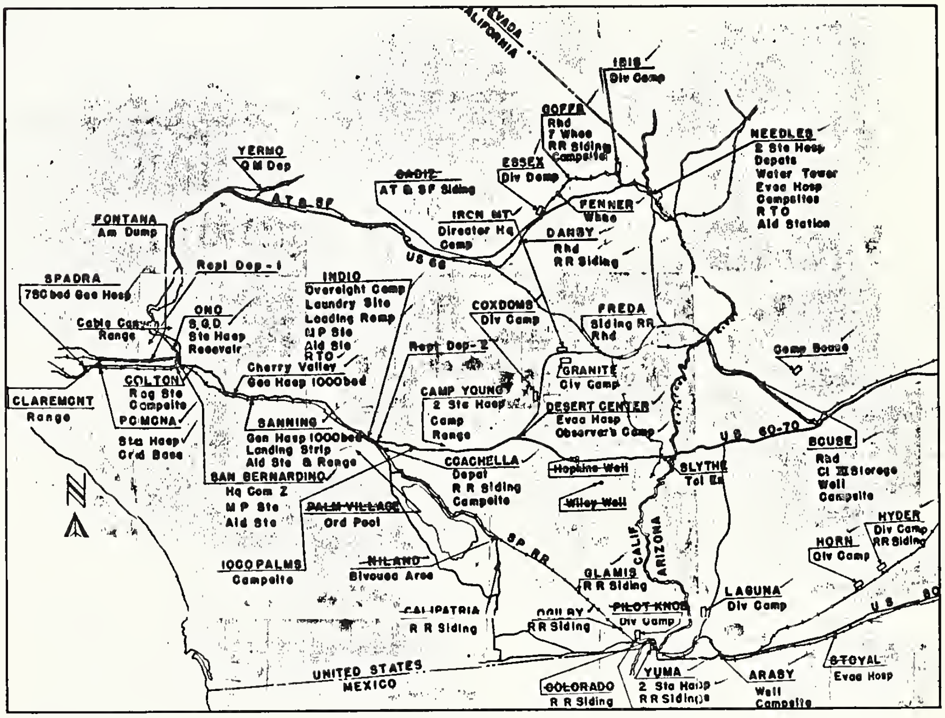

Figure 2
C-AMA Installations. Study 15, U.S. Army Historical Section.

And third, the area itself was a thorn to the spirit with its desolation and abrasive dust and extreme shifts in temperature. Men had to become acclimated. The 5th Armored Division was warned to come ten days early before maneuvers, the 3rd Armored Division had suffered some heat prostration cases earlier. On occasion commanders did not properly inform themselves. In July and August of 1942, some troops arrived wearing woolen uniforms. One participant who was stationed at the Army Air Base at Blythe, the site is now the local airport west of town, he noted when he arrived the Army Air Corps had virtually no provisions for anything. They had no summer uniforms, so they went to town and bought coveralls for flying and working on the machines. He further noted, "Living conditions were bad, one six-week period of canned weiners, cornbeef hash, bread and coffee. We sent home for underwear and shoes. This was the summer of 1942."[2] (Figure 3). At Camp Young some units set up containers with ice water and the result was the men were reported to have been attacked by cramps. (The physiologic explanation for this always eludes me.)

One commander believed his men could not work in the heat so his men enjoyed a siesta after lunch until 3:00 p.m. This unit suffered a higher percentage of heat prostration than the neighboring unit which worked all day. (It doesn't say how fast they worked.)

The Maneuver Surgeon under General Patton warned the command that danger lurked in reaching for an object on the ground unless one was assured that a rattlesnake was not coiled in the immediate vicinity. He advised the men to drink liquids frequently and slowly, in small amounts, and to avoid overexposure to the sun. Salt loss in perspiration was to be replenished by taking three ten grain salt tablets daily. He cautioned the men, when driving over desert plants in the open, to be careful lest flying spines from these plants injure their eyes. This was not an infrequent occurrence.[1]

The Camp Sites

Little now remains of the camp sites which were widespread in the region of the Colorado River on both the California and Arizona sides of that World War II era. (Figure 3-4). Little data is extant on the medical problems encountered with two notable exceptions. "yellow jaundice" and San Joaquin Valley fever were soon demanding attention.

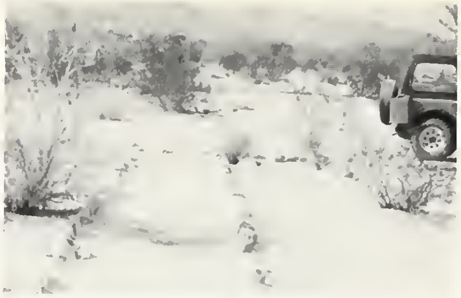

Figure 3
Site of the 92nd Evac. Hospital, East of Desert Center. Photo by Author.

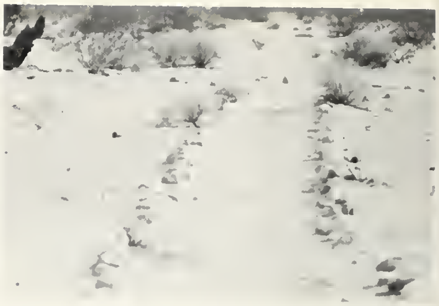

Figure 4
Remnants of the walkway. Camp Coxcomb, California.

Ask anyone who trained in this or other maneuver areas in Tennessee, Louisiana, Mississippi, the Carolinas or C-AMA, you may hear of the widespread intermittent diarrheas, or the "C" ration blues, and in season the flies, the flies, the flies. (Why is it that Mainland China is free of flies, what is it they know that we don't?) I recall one CO who berated the men of his command for the high incidence of diarrhea, propounding that it was due to the lack of care in cleaning and caressing mess gear in boiling soapy water and properly rinsing it. Two days later his driver reported the Colonel made several unscheduled rest stops, roadside, on his way to Maneuver Headquarters. While the flies lacked the deadly B Typhosis latrinograms, that was so prevalent in the Spanish American War, 1898, there was no shortage of the ubiquitous Shigella who loved to irritate the intestinal tract.

The camp sites were temporary tent encampments. As you wander around these desert sites some forty years later, the street and road outlines are gradually returning to desert vegetation. Here and there a unit headquarters designated in a rock monument survives. The vast extent of a division camp site is best demonstrated from the air. (Figure 5.) Large storage buildings were used alongside railroad sidings but these have long since disappeared. Some Army Air Corps Air Bases survive such as the one at Ajo, Arizona, still an active Air Force Base. Others are city airports such as Blythe, California. Still others can only be located by traces of the runway such as Rice, California. Time and the elements are great erasers of C-AMA.

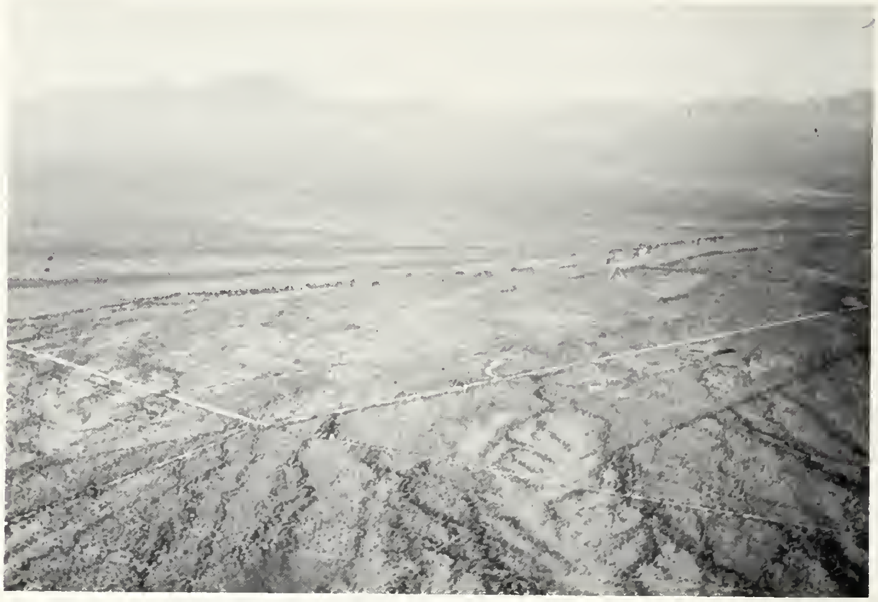

Figure 5
Camp Bouse, Arizona, today from the air. Photo courtesy Lt. Col. John Lynch, USAF Retired.

Administrative Foul Ups

By January 6, 1943, there was a DTC General Order dividing the Maneuver Area into a combat zone, and if you can believe it, this combat zone was completely surrounded by a communications zone so if you ran through the combat zone you were bound, not to eventually come up in enemy held territory, but in another portion of the rear area of friendly troops Com. Z. This led to the usual squabble about who commanded what. The Medical Department didn't escape and the following is extracted from the official history. "Thus, during the maneuvers, the Surgeon of the Communication Zone unburdened himself to an umpire to the effect that many of his contemplated projects and recommendations were continually being disapproved by the Desert Training Surgeon."[1] The DTC Surgeon was the one with clout. The Medical Office of the Headquarters, Army Ground Forces, believed that both the DTC Surgeon and the Surgeon of the Communication Zone were trying to do their jobs in a conscientious manner; some of their differences arose from disagreement about the use of medical means available to the Center such as the medical laboratory and medical regiment. Headquarters, Army Ground Forces, settled the immediate problem by ordering the Surgeon of the Communication Zone to the AGF Replacement Depot at Fort George Mead. Soon after this, when they got around to it, there was a directive July 16, 1943 which corrected this anomaly of having the combat zone surrounded by the communication zone. (One wonders what happened to the beleaguered Com Z Surgeon. What jungle in the South Pacific did he then grace?)

Interruptions in Training

As might well be imagined there were a good many other nonmedical interruptions in training, especially during the early phase when there was an urgent need for combat troops with some training for overseas duty.

We have mentioned that General Patton had planned the first DTC maneuvers, but he departed the area before the time set for the mass maneuver August 28 through October 28, 1942.

Besides the loss of officer personnel, three chiefs of staff were relieved and promoted to the rank of general officers, and were lost to the DTC when experienced and capable officers were at a premium, all during this hectic expansion in 1942. But now we come to the devastating delay, a serious epidemic of "yellow jaundice" in July which filled the hospitals. Convalescents had to be tried out before they were capable of returning to duty.[1]

This epidemic of "yellow jaundice" was so severe and widespread among the troops, not only in this area, but in some others, the Surgeon General of the United States Army organized an investigative team conducted under the direction of Brig. Gen. G. S. Simmons, MC and Col. S. Bayne Jones, M.C. of the Division of Preventive Medicine of the Office of the Surgeon General with the assistance of many other medical officers and health installations.[3] Remember at this time the virus had not been isolated and the two or more types of infectious hepatitis were not differentiated. The study was exhaustive, it was done by field work in the area, together with questionnaires sent to what appears to be well over 100 Army and Navy installations of the Western United States, running down the number of cases, the fatality rate and other factors which might have influenced the onset of "yellow jaundice." The investigators noted that there were no distinguishing symptoms which the cases in this epidemic could be differentiated from the so-called catarrhal jaundice, now more correctly designated as infectious hepatitis, commonly encountered in the civilian population either as scattered cases or in occasional epidemics. While no deaths occurred in the area under investigation up to the end of the preliminary field study, there were fatalities later. The case fatality rate for jaundice in Army personnel in Continental United States was approximately two per thousand and the pathological lesions were those of acute or subacute yellow or red atrophy of the liver, differing distinctly from that of yellow fever. As soon as the investigation disclosed a rather widespread incidence of jaundice among the troops in the west, the Surgeon General was appraised in the following preliminary findings and recommendations.[3]

1. Since March 1, 1942 about 817 soldiers in California Posts who were vaccinated against yellow fever at the end of September 1941 and the first of January 1942 had developed a mild disease characterized by jaundice.
2. These troops were vaccinated against yellow fever principally but not exclusively with vaccine lots No. 331, 335, and 338 at Camp Davis, North Carolina, Jefferson Barracks, Missouri, Camp Callon, California, and Stockton and Moffet Fields, California.

This, together with some other recommendations, resulted in the Surgeon General taking action to stop, "The use of all yellow fever vaccine manufactured by the International Health Division in New York for the time being and to use vaccine of the same type prepared by the United States Public Health Service in New York and at the Mountain Laboratory of the National Institute of Health." It was further stated, "As it seemed probable that an iatrogenic agent had been introduced into certain lots of yellow fever vaccine manufactured in New York through the added normal human serum, both of these manufacturing laboratories found ways to modify their methods so that the human serum could be omitted entirely from the vaccine."[3]

The cases elicited in this study totaled 10,284 jaundice cases with 31 deaths. It was further concluded that only nine batches of a total of 63 vaccine lots gave rise to cases of jaundice or deaths. Of these total cases, and remember a lot of these case finding were from patient records, there were 1,655 cases in which they were not able to determine from which lot the patient had received yellow fever vaccine. There were 191 cases in which there were no vaccination records at all. In the former number there were two deaths and in the latter three. This did not mitigate against the firm findings and conclusions that the yellow fever vaccine was at fault and exactly which lots were contaminated. As previously stated, this was one of the factors which delayed the 1942 interdivision maneuvers that had been visualized by Patton as a final part of the training cycle for which the divisions were to be rotated into the desert. The entire evacuation chain was filled with these patients during the summer of 1942.[3]

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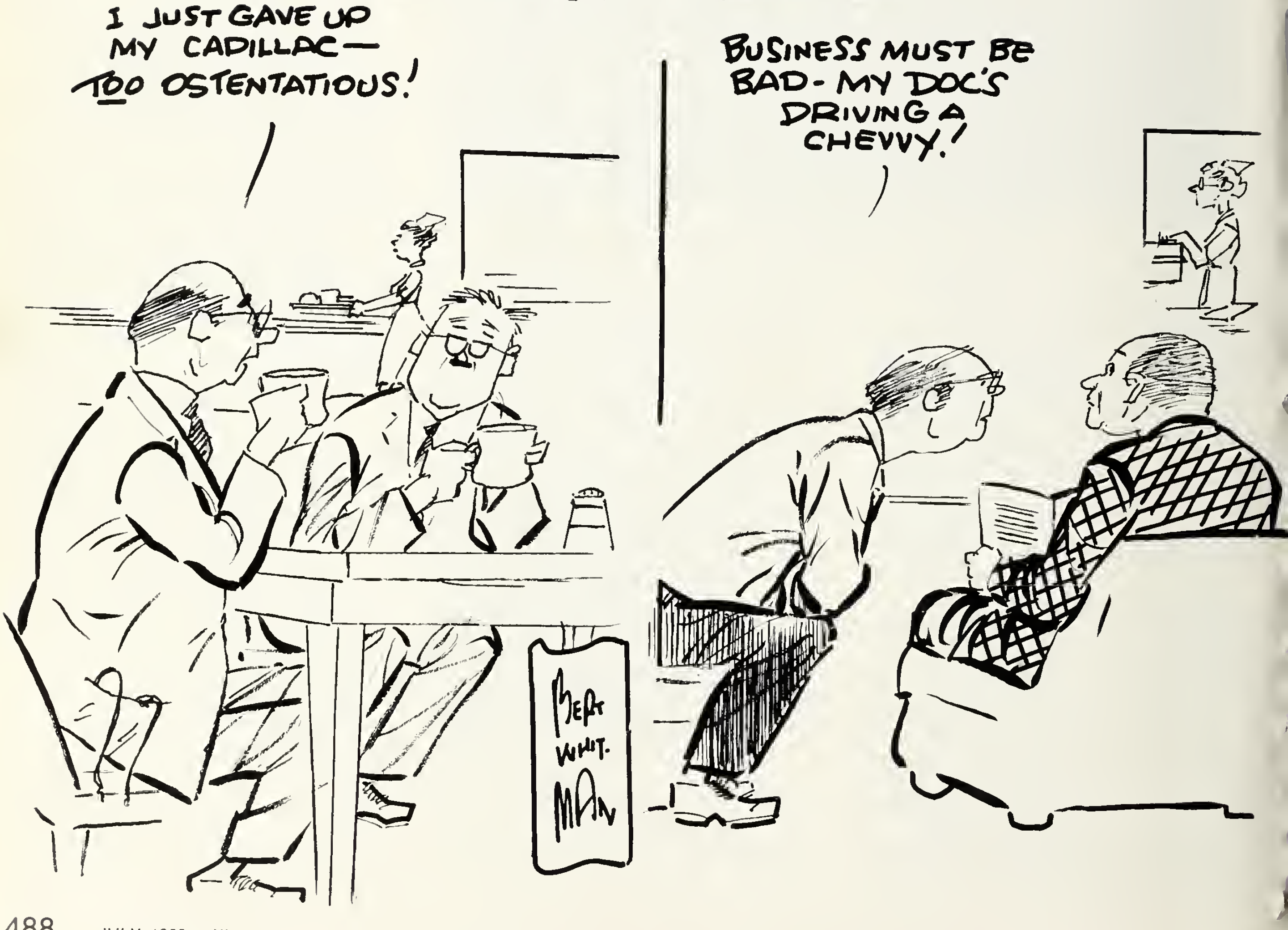
CONFLICTS in Medicine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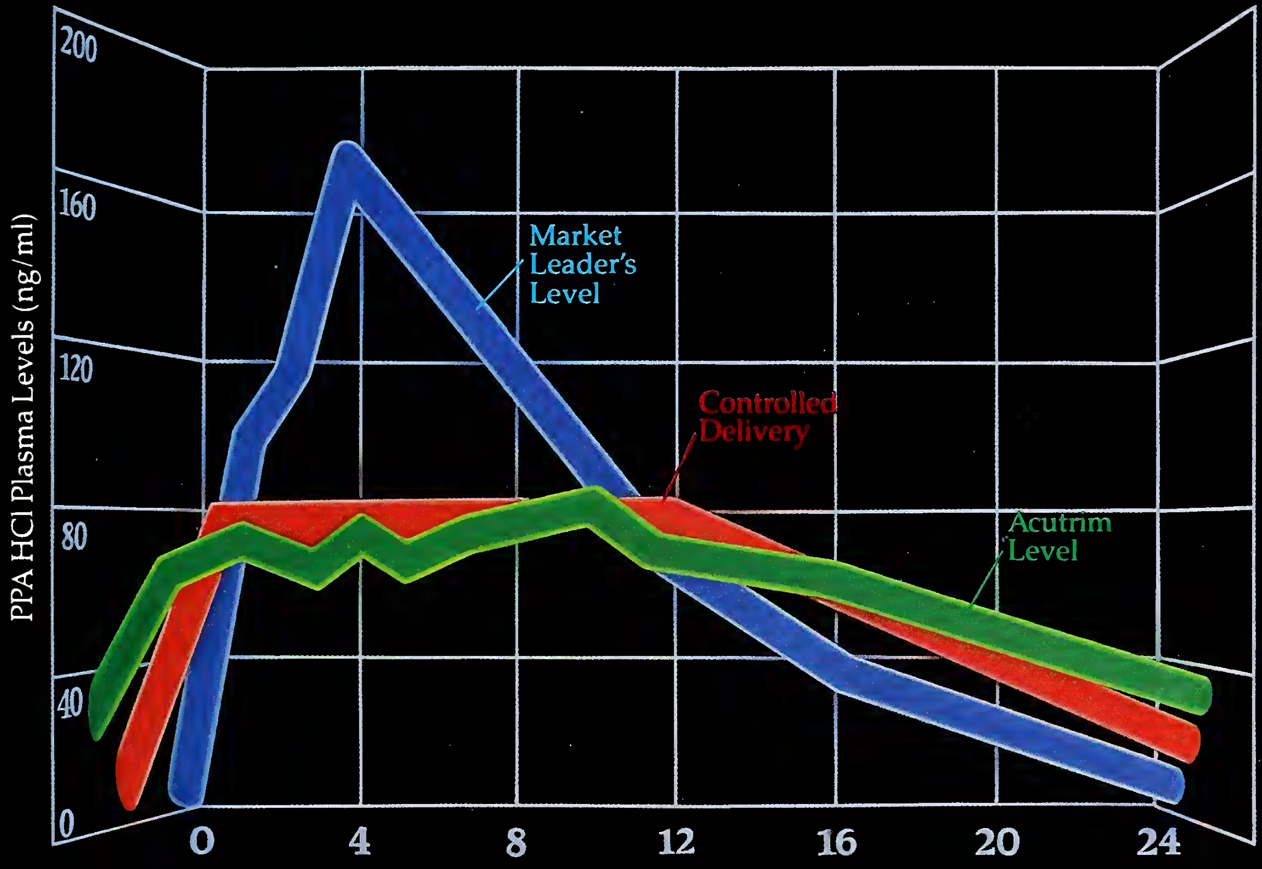

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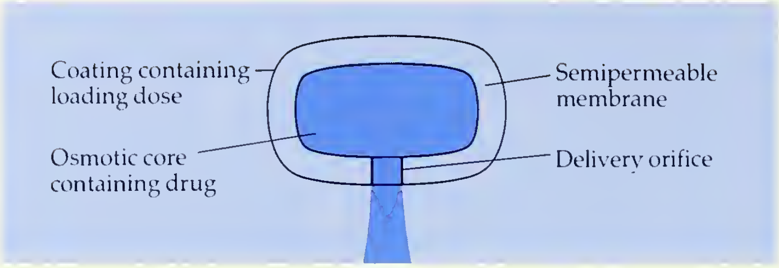

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GOALS OF THE ARIZONA MEDICAL ASSOCIATION

I TO PROMOTE OPTIMAL HEALTH AND MEDICAL SERVICES FOR THE CITIZENS OF ARIZONA.

II TO DETERMINE THE MOST EFFECTIVE ORGANIZATIONAL STRUCTURE AND COMMUNICATION MECHANISMS FOR THE ARIZONA MEDICAL ASSOCIATION.

III TO REPRESENT THE ENTIRE MEDICAL PROFESSION, INCLUDING MEDICAL STUDENTS, IN ARIZONA; SUCH REPRESENTATION TO INCLUDE BUT NOT BE LIMITED TO BEING THE ADVOCATE OF THE MEMBERSHIP WITH THE LEGISLATIVE, ADMINISTRATIVE AND JUDICIAL ARMS OF STATE GOVERNMENT.

IV TO EXPAND THE ROLE OF THE ASSOCIATION IN PROMOTING THE STANDARDS AND CLARIFYING THE SCOPE OF MEDICAL ETHICS.

V TO PROVIDE TO INDIVIDUAL MEMBERS BENEFITS AND SERVICES TO AID THEM IN THEIR PROFESSIONAL PURSUITS.

VI TO REPRESENT THE MEMBERSHIP IN MATTERS PERTINENT TO THE ECONOMICS OF MEDICINE.

VII TO REPRESENT THE MEMBERSHIP IN MATTERS PERTAINING TO MEDICAL EDUCATION, SCIENTIFIC AFFAIRS AND PROMOTION OF THE ART AND SCIENCE OF MEDICINE.

3/26/83

Annual Meeting Highlights

Presidential Address

Neopito L. Robles, M.D.

Presented to the House of Delegates
May 20, 1983

Distinguished Guests, Members of the House of Delegates, Ladies and Gentlemen:

It is with humility and a great sense of gratitude to the members of the House of Delegates of the Arizona Medical Association for the trust and confidence that you have bestowed upon me to serve as your President for the coming year. The previous presidents have served us very well; and I hope I can continue the tradition of service above and beyond the call of duty.

The decade of the 80's will be an era of changing economic realities in many ways, especially in the delivery for medical care. I believe that the delivery of health care needs the people of this country have changed markedly in recent years, and the future looks more complicated.

This country of ours, through our present system, gives the best medical care in the world, however, it is also the most expensive. Much has been accomplished in the past several years. Some of the more important advances are:

a. The life expectancy continues to rise, it was 68.2 years in 1950; 73.6 years in 1979; and reached 74.1 years in 1981.

b. The infant mortality continues to drop. In 1981, the rate was 11.7 per 1,000 live births, six percent less than the 12.5 deaths in 1980, and a sharp decrease from 29.2 per 1,000 in 1950.

c. More cancer patients are being cured through earlier diagnosis and better combined treatment.

d. Advances in the better understanding of different diseases affecting different organ systems have made it possible for many Americans to live longer and be more productive. Examples of this are the use of renal dialysis for end stage renal disease and joint replacement procedures.

e. Advances in treatment of cardiovascular disease have allowed many of our patients to increase their life span with a better quality of life.

f. Newer diagnostic modalities help us to be more precise in making diagnoses and instituting treatment programs; these include ultrasound, CT scan, and now the N.M.R.

These accomplishments have been obtained at enormous costs, which this country was able to meet, but inflation, as well as more patient demands for these treatments, have been significant factors in increasing the cost of medical care. The escalating cost of medical care is well known to all of us, surpassing the inflation rate two to three times. In 1965, when Medicare was enacted, the total cost of health care was $39 billion, and represented about 5.9% of the gross national product. In 1981, the cost of health care in this country was $287 billion, representing 9.8% of the G.N.P. Because of this, government at all levels, starting with the federal government, is enacting new laws—some untested—some with limited experience in payment for health care to our Medicare patients. As most of you know, Congress has passed a bill, and our President has signed it into law, the prospective payment plan, based on the diagnostic related grouping (DRG) for hospital reimbursement to take effect in October 1983. Since this has come to pass, I have reason to believe that changes in Medicare payments for Part B are just around the corner. And in our great state of Arizona, of course, we have AHCCCS. You are all aware of the problems of this program. I sincerely hope that those of us in the medical profession in this state will seek changes to modify this program to be a more efficient and cost-effective way of delivering health care to the indigent patients.

Large corporations who provide health insurance to their employees, labor unions and third party payors are all very active in the health care delivery system from the economic point of view. Some of their concerns, in my estimation, are well founded and deserve to be debated upon by physicians so that we can maintain an open line of communication with them, understand their problems, and let them know of our concern, also. We must impress upon them our desire to cooperate with them and let them know of our position: i.e., that the quality of health care to the patients is of utmost importance to us and that we will work with them to deliver this care at reasonable cost without sacrificing quality.

At the last leadership meeting of the AMA, this past February, a part of the program was titled *Changing Economic Realities: It is not Business as Usual.* Physicians, health economists, union leaders, and spokesmen for the American Hospital Association expressed their concerns. It seems that the consensus of those present was that we should all work together listen, discuss the problems, and try to work out the solutions to benefit the American people. It is with this idea in mind that we need all the help we can get in order not to repeat past mistakes of taking unilateral action and not being eceptive to suggestion and changes.

The delivery of health care to our patients is too mportant an undertaking to be trusted to only one group of individuals, whether the group be the government, the physicians, labor unions, health care providers or the third party payors. I feel that we should all pitch in together, because the alternative will produce too catastrophic a change that might sacrifice the highest quality of health care in the world second to none for the sake of cost containment. I don't have to remind you that competition is getting keener because of more physicians coming to our state in all types of specialties. Many groups of paramedical health providers are working through the legislature to get them to pass laws allowing them to practice medicine unsupervised. Examples of these are the physical therapists, optometrists, nurse midwives, nurse practitioners, and members of the natural healing arts.

These groups are wise in their deliberation and have effective political action groups working and contributing to the election of members of the Arizona Legislature. One group of health providers assesses their members $1,000 a year for their political action committee and makes significant contributions during election years. However, the medical profession in Arizona is not as responsive to the plans of ArMPAC; only about 300 members of ArMA contribute to ArMPAC out of some 5,000 M.D.'s licensed in Arizona. We should all try to convince our colleagues to be more active and support our political action group so we may have an effective lobbying effort with adequate funds to disburse to help elect members of the legislature sympathetic to our cause of providing high quality of medical care to the people of Arizona at reasonable cost.

The hospitals in this state are and should continue to be our ally in the health care delivery. I realize that there are some problems—hospitals opening up satellite offices staffed by hospital-paid physicians. In some parts of this state, hospital beds are being added when it seems that there are enough beds already. This contributes to the increasing cost of health care. We, as physicians, should try to establish a better rapport with the boards of trustees and administrative staff of our hospitals so we can have a more visible impact on their planning, deliberations, and the future course. We should try to convince the trustees of the hospitals that more physicians should be members of the board so we can share with them our expertise and make constructive suggestions. We should keep repeating to all who want to listen that we want to continue delivering to our patients through our offices and hospitals the highest quality of care at reasonable cost and will be receptive to suggestions as we expect the hospital to be receptive to helpful recommendations from the physicians.

I know that AHCCCS is new and an innovative way of delivering medical care to the medically indigent in Arizona. It is being followed very closely by other states and by the federal government. With its many shortcomings, I believe that we in the medical profession should work with the state government and make constructive criticism, offer suggestions to improve the program, to show everyone that we have an open mind and are willing to pitch in to help implement a medical delivery system to our indigent population that is cost-effective, without sacrifice of quality. Therefore, if AHCCCS succeeds, we have made our contribution; and if it fails, it did so because of its own shortcomings, and we cannot be blamed for putting a stumbling block to its implementation. Let it be known to everybody that the physicians of Arizona care for our patients and will continue to deliver the medical care needed by our patients, at no cost or reduced fees, for those unfortunate victims of the bad economic times which have been laid off work and have lost their health care insurance. All over this great country of ours, medical societies and organizations are sympathic to these patients and offer free or reduced costs of medical services to the needy. We here in Pima County have started "Project Concern" and have had excellent response from the medically indigent and our colleagues have risen to the occasion with flying colors. I'm certain other county medical societies in the state are implementing similar plans.

In closing, let me reiterate my plea for your help and understanding to work together for the common good of our patients—to keep an open mind and keep our lines of communication open; to strive to find solutions to the ever-increasing problems of escalating costs of medical care—increasing competition; to new plans in the delivery of medical care, such as more HMO's and PPO's; and to share with other providers our expertise and counseling as to how we can continue to deliver the best medical care to our patients at reasonable costs. For, in unity, there is strength; and, in identifying and understanding the problems, we can offer solutions, and above all, let us help each other so we can help our patients.

The Arizona Medical Association, Inc. Resume

of the House of Delegates 1983 Annual Meeting Second Regular Session May 21, 1983

Adjourned meeting of the House of Delegates of the Arizona Medical Association, Inc., held at the Doubletree Inn, Tucson, Arizona, May 21, 1983, convened at 8:07 a.m., Robert A. Price, M.D., Speaker of the House, presiding.

Credentials

The Credential Committee reported a quorum present and the House duly constituted.

Roll Call

On the Roll Call, 91 Delegates (and/or Alternate Delegates) and 24 members of the Board of Directors were present.

Minutes

Minutes of the meeting of the House of Delegates held May 22, 1982, were approved as distributed.

Election of Officers

The following officers were elected for a term of one year:

President-Elect

Earl J. Baker, M.D.

Vice President

Gary L. Henderson, M.D.

Treasurer

Robert S. Hirsch, M.D.

Speaker of the House

Robert A. Price, M.D.

The following were elected for a term January 1, 1984 to December 31, 1985:

Delegate to the AMA

Edward Sattenspiel, M.D.

Delegate to the AMA

Richard D. Zonis, M.D.

Alternate Delegate to the AMA

John F. Kahle, M.D.

Alternate Delegate to the AMA

Franklin D. Loffer, M.D.

Election of District Directors

The following District Directors were elected.:

Central District Directors

John C. Bull, Jr., M.D. (1983-1986)
Walter J. Nieri, M.D. (1983-1986)
William R. Myers, M.D. (1983-1986)

Southeastern District Director

Kenneth A. Dregseth, M.D. (1983-1986)

Southern District Directors

William N. Neubauer, M.D. (1983-1986)
Christopher T. Maloney, M.D. (1983-1986)

Southwestern District Director

Ronald L. Christ, M.D. (1983-1986)

Reference Committee on Amendments

Report of the Reference Committee on Amendments as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried:

(Note: All bracketed, italized words represent deletions, al fully capitalized words are new material.)

Resolution A-1-83

Subject: Enlargement of Group Eligible for Nomination and Elections

Whereas, It is most important that the leadership for the Arizona Medical Association be drawn from as large a segment of the medical profession as possible so as to provide qualified and interested physicians for ArMA offices; and

Whereas, The group currently eligible within the Association bylaws for nomination and election is somewhat restrictive; therefore, be it

Resolved, That Chapter V, Section 1 of the bylaws of the Arizona Medical Association be amended to read as follows:

"Section 1. General; Qualifications:—All elections for officers shall be conducted as a part of the business of the regular annual meeting of the House; shall be by secret, written ballot, and the candidate receiving a majority vote for a particular office shall be elected to that office. If no one of three or more candidates for a particular office shall receive a majority of the votes cast, the two with the highest number of votes shall be the candidates in a run-off election. If there are two candidates only, and the vote is a tie, there shall be a run-off election. No person shall be eligible for election to state office, or to the Board, who has not been a member of the Association for the preceding three years, and who was not a Delegate, ALTERNATE DELEGATE, *or* Director, OR A PAST PRESIDENT OF A COUNTY MEDICAL SOCIETY at the time of election. No person shall be eligible for nomination as a Delegate or Alternate Delegate to the American Medical Association who has not been a member of the American Medical Association for the preceding three years, and who was not a state Delegate, ALTERNATE DELEGATE, *or* Director, OR A PAST PRESIDENT OF A COUNTY MEDICAL SOCIETY at the time of election. All officers and members of the Board shall serve until their successors are elected and have accepted the office."

Resolved, That Chapter VIII, Section 3 of the bylaws of the Arizona Medical Association be amended to read as follows:

"Section 3. Election of Delegates: List Thereof:—Sufficiently in advance of the Annual Meeting each county society, each specialty society, the Arizona Medical Association Resident Physician Section, and the Arizona Medical Association Medical Student Section shall elect Delegates and an equal number of alternates to represent it in the House. In the absence of any Delegate, the alternate may vote in the Delegate's name on any question before the House. *(No alternate shall be eligible for election to office, but may be appointed to membership on House committees in the absence of the Delegate.)* The secretary of each county society, each specialty society, the Arizona Medical Association Resident Physician Section and the Arizona Medical Association Medical Student Section shall send the list of such elected Delegates and alternates to the Secretary of the Association not later than two months before the Annual Meeting. Representation in the House shall be contingent upon compliance with this provision. A member to be seated must present evidence at the time of appearance at the House of official election by the county society, specialty society, the Arizona Medical Association Resident Physician Section, or the Arizona Medical Association Medical Student Section."

Adopted
May 21, 1983

Resolution A-2-83
Subject: Specialty Society Representation

Whereas, There appear to be certain inconsistencies in the wording contained in Chapter VIII, Section 2 (b) of the Bylaws of the Arizona Medical Association, which might cause confusion or misinterpretation of the intent of the section; and

Whereas, There is a lack of standard for specialty society representation in the House of Delegates; now, therefore, be it

Resolved, That Chapter VIII, Section 2 (b) of the Bylaws of the Arizona Medical Association be amended to read as follows:

"(b) Specialty Societies:—A state specialty society shall be entitled to representation in the House of Delegates by one Delegate and alternate who shall be members of the Association if (A) the specialty has a national board recognized as a primary board by the American Board of Medical Specialties, and (B) a minimum of twenty members practicing in Arizona, the majority of whom must be members of the Association, and (C) the activity of the specialty society is manifested by an existing organization or structure exhibiting a slate of periodically elected officers, and established constitution and bylaws, and a frequency of meeting at least once a year, AND (D) BY VOTE OF THE HOUSE OF DELEGATES IT IS DEEMED TO BE IN THE BEST INTERESTS OF THE ASSOCIATION. *(Qualifying societies shall be elected to representation by the House of Delegates.)* A specialty society shall have an additional Delegate and alternate for each additional one hundred fifty members of the society who are members of the Association, as determined October first preceding the Annual Meeting."

Adopted as Amended
May 21, 83

Resolution A-3-83
Subject: Dues Billing

Whereas, The Arizona Medical Association has recently purchased and installed a comprehensive computer system; and

Whereas, One of the many capabilities afforded by such new system is that of dues billing; therefore, be it

Resolved, That Chapter IX, Section 1 (b) and Section 4 (c) of the Bylaws of the Arizona Medical Association be amended to read as follows:

"Section 1. Fixing of Annual Dues; Payments; Reinstatements; Collections; Enforcement:—

(b) The annual dues and the dues and assessments of the American Medical Association shall be payable January first of the year for which levied and shall be delinquent after February fifteenth of that year. The secretary of each county society shall collect and forward to the Association the dues for its members, together with the dues and assessments levied by the American Medical Association for those physicians who are its members. AT THE OPTION OF THE COUNTY SOCIETY THE ASSOCIATION MAY COLLECT THE DUES AND ASSESSMENTS OF ITS MEMBERS AND THE MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION, FORWARDING THE APPLICABLE DUES AND ASSESSMENTS TO THE AMERICAN MEDICAL ASSOCIATION; EACH COUNTY MAY COLLECT ITS OWN DUES AND ASSESSMENTS; OR THE ASSOCIATION MAY COLLECT ALL DUES AND ASSESSMENTS, FORWARDING THE APPLICABLE DUES AND ASSESSMENTS TO THE COUNTY SOCIETIES AND THE AMERICAN MEDICAL ASSOCIATION."

"Section 4. New Members; Dues; Assessments; Collection and Payment:—

(c)*(The secretary of each county society shall collect and forward the dues of new members to the Association.)* THE DUES OF NEW MEMBERS SHALL BE COLLECTED IN ACCORDANCE WITH CHAPTER IX, SECTION 1 (b). Membership in the Association shall not be effective until the same are received by the Association."

Adopted as Amended
May 21,83

Resolution A-4-83
Subject: Establishment of Hospital Medical Staff Section

Whereas, American hospitals are under increasing regulatory and economic pressure to control cost and redefine composition of their medical staffs; and

Whereas, Arizona hospitals are subject to the same challenges and have adopted new months of doing business which may have potentially adverse effects upon the private practices of their medical staffs; and

Whereas, The Arizona Medical Association, by the establishment within its organizational structure of a Hospital Medical Staff Section, would afford physicians a forum to study these changes; therefore, be it

Resolved, That the Bylaws of the Arizona Medical Association be amended as follows:

CHAPTER II - Membership - Section 3. Classes of Membership: (A) Active

All active members of all the county societies shall be active members of this Association. The minimum qualifications for active membership (other than for interns, residents and medical students) in a county society shall be that the individual must (1) hold a degree of Doctor of Medicine or its equivalent or Doctor of Osteopathy, (2) be an American citizen, or have made application for American citizenship papers (in which case reasonable progress must be made toward full citizenship or the membership shall lapse), (3) hold an unrevoked license to practice medicine and surgery or osteopathic medicine and surgery in the State of Arizona, (4) be a legal resident of the State of Arizona. Subject to these minimum qualifications and to the provisions for loss of membership (Chapter II, Section 4), each county society shall be the exclusive judge of the qualifications of its members.

Interns and residents who are licensed or registered with the Board of Medical Examiners, State of Arizona, are eligible for active membership in a county society. These members shall constitute the membership of the Arizona Medical Association Resident Physician Section.

Full-time students who are pursuing a course of study leading to the degree of Doctor of Medicine or Osteopathy in any accredited school of medicine or osteopathy located in Arizona shall be eligible for active membership in the Arizona Medical Association either directly or through the local county medical society. These members shall constitute the membership of the Arizona Medical Association Medical Student Section.

Members of the Resident Physician Section *and*, the Medical Student Section AND THE HOSPITAL MEDICAL STAFF SECTION are eligible to serve as Delegates to the Resident Physician *and*, Medical Student AND HOSPITAL MEDICAL STAFF Sections of the American Medical Association.

CHAPTER VIII - House of Delegates - Section 1. Composition of House; Meetings be amended to read:

The House shall constitute the voting body of the Association and shall be composed of the elected Delegates of the county societies, elected Delegates of the specialty societies, elected Delegates of the Arizona Medical Association Resident Physician Section, elected Delegates of the Arizona Medical Association Medical Student Section, ELECTED DELEGATES OF THE ARIZONA MEDICAL ASSOCIATION HOSPITAL MEDICAL STAFF SECTION, and the members of the Board. Delegates who are thereafter elected as officers do not by such election lose their status as voting Delegates in the House. The Past Presidents of the Association shall be ex-officio members of the House of Delegates without the right to vote.

The House shall meet at least once a year at the time of the Annual Meeting. In addition, special meetings of the House may be held at any time, upon at least six weeks' notice thereof to the Delegates, at the call of the Board, or upon the call of twenty Delegates with delegate representation from at least seven county societies.

CHAPTER VIII - House of Delegates - Section 2. Number of Delegates be amended by adding the following new paragraphs:

(D) HOSPITAL MEDICAL STAFF SECTION:— EACH HOSPITAL MEDICAL STAFF WITHIN THE STATE OF ARIZONA SHALL BE ENTITLED TO SELECT, FROM THE PHYSICIANS ON ITS MEDICAL STAFF, ONE REPRESENTATIVE, WHO MUST BE AN ACTIVE MEMBER OF THIS ASSOCIATION, TO THE ARIZONA MEDICAL ASSOCIATION HOSPITAL MEDICAL STAFF SECTION, WHICH SECTION SHALL BE CHARGED WITH THE RESPONSIBILITY OF STUDYING CHANGING HOSPITAL POLICIES, INFORMING COLLEAGUES OF THOSE CHANGES, AND PROTECTING THE QUALITY OF CARE IN ARIZONA HOSPITALS.

THE ARIZONA MEDICAL ASSOCIATION HOSPITAL MEDICAL STAFF SECTION SHALL BE ENTITLED TO REPRESENTATION IN THE HOUSE BY TWO DELEGATES OR THEIR ALTERNATES.

CHAPTER VIII - House of Delegates - Section 3. Election of Delegates: List thereof be amended to read:

Sufficiently in advance of the Annual Meeting each county societies, each specialty society, the Arizona Medical Association Resident Physician Section, *and* the Arizona Medical Association Medical Student Section, AND THE ARIZONA MEDICAL ASSOCIATION HOSPITAL MEDICAL STAFF SECTION shall elect Delegates and an equal number of alternates to represent it in the House. In the absence of any Delegate, the alternate may vote in the Delegate's name on any question before the House. No alternate shall be eligible for election to office, but may be appointed to membership on House committees in the absence of the Delegate. The secretary of each county society, each specialty society, the Arizona Medical Association Resident Physician Section, *and* the Arizona Medical Association Medical Student Section, AND THE ARIZONA MEDICAL ASSOCIATION HOSPITAL MEDICAL STAFF SECTION shall send the list of such elected Delegates and alternates to the Secretary of the Association not later than two months before the Annual Meeting. Representation in the House shall be contingent upon compliance with this provision. A member to be seated must present evidence at the time of appearance at the House of official election by the county society, specialty society, the Arizona Medical Association Resident Physician Section, (or) the Arizona Medical Association Medical Student Section OR THE ARIZONA MEDICAL ASSOCIATION HOSPITAL MEDICAL STAFF SECTION.

Adopted as Amended
May 21, 1983

Reference Committee on Resolutions

Report of the Reference Committee on Resolutions as deleted, amended or as otherwise disposed of, was adopted with the following actions taken on motions regularly made and carried:

1982-83 Report of the Legislative Committee
Referred to Board of Directors For Appropriate Action
May 21, 1983

1982-83 Report of the ad hoc Malpractice Insurance Crisis Committee
Referred to the Legislative Committee for Appropriate Action
May 21, 1983

1982-83 Report of the Medical Education Committee
Referred back to the Medical Education Committee for review of AMA Council on Medical Education Recommendations as well as concerns of the Arizona Board of Medical Examiners and report to the Board of Directors.
May 21, 1983

Resolution 1-83
Subject: Requests for Contributions

Whereas, The Arizona Medical Association is supported almost entirely from voluntary dues payments made by members that expect those funds to be used for programs initiated within the federation of organized medicine; and

Whereas, If this concept is valid, it would then be inappropriate for those funds to be given to outside organizations; now, therefore, be it

Resolved, That the policy of the Arizona Medical Association is that it will not make contributions to organizations outside the federation of medicine (county societies, specialty societies, and the AMA); and be it further,

Resolved, That the Board of Directors may alter this policy at its discretion.

Adopted as Amended
May 21, 1983

Resolution 2-83
Subject: Arizona Medical Association Membership Requirements

Resolved. That the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association be instructed to prepare appropriate amendments to the Articles of Incorporation and Bylaws whereby membership in a constituent county medical society would not be a requirement for membership in the Arizona Medical Association.

Not Adopted
May 21, 1983

Resolution 3-83
Subject: Granting of Specialty Society Representation

Whereas, The Arizona Society of Allergy and the Arizona Thoracic Society have applied for representation in ArMA's House of Delegates; and

Whereas, Each society above named has met all of the criteria set forth in Chapter VIII, Section 2 (b) of the Association bylaws, which criteria is more specifically set forth below:

(A) the specialty has a national board recognized as a primary board by the American Board of Medical Specialties and

(B) a minumum of twenty members practicing in Arizona, the majority of whom must be members of the Association and

(C) the activity of the specialty society is manifested by an existing organization or structure exhibiting a slate of periodically elected officers, and established constitution and bylaws, and a frequency of meeting at least once a year; now, therefore, be it

Resolved, That the House of Delegates of the Arizona Medical Association deems it to be in the best interests of the Association that the Arizona Society of Allergy and the Arizona Thoracic Society be granted representation by one Delegate each in the House of Delegates, said representation to be effective immediately.

Referred to the Board of Directors for further Study and Report back to the House of Delegates
May 21, 1983

Resolution 4-83

Subject: 1984 Calendar Year Budget of Income and Expense

Whereas, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore, be it

Resolved, That the following Budget of Income and Expenditures for the calendar year 1984 be adopted:

	Income	Expenditures	
General Dept.	$ 931,835.00	$ 815,190.00	$ 116,645.00
Committee Department	13,200.00	115,000.00	(101,800.00)
B & L Fund Committee	20,000.00	20,000.00	-0-
Publishing Dept.	95,140.00	109,713.00	(14,573.00)
Total	$ 1,060,175.00	$ 1,059,903.00	$ 272.00

and be it further

Resolved, That the annual dues of the Arizona Medical Association, Inc. be continued at $300 for Active members, with $280 going to General Department Budget and $20 going to the Publishing Department Budget; and be it further

Resolved, That the Service member dues be continued at $75, with $55 going to the General Department Budget and $20 going to the Publishing Department Budget; and be it further

Resolved, That the Intern or Resident Active member dues be continued at $30 with $10 going to the General Department Budget and $20 going to the Publishing Department Budget.

Adopted
May 21, 1983

Resolution 5-83

Subject: Discontinuance of Requirement for Premarital Syphilis Serology Testing

Whereas, The Arizona Society of Pathologists in conjunction with the Arizona Department of Health Services has reviewed the historical epidemiologic data; and

Whereas, There have been few cases of syphilis identified by premarital syphilis serology testing; and

Whereas, The personal costs of this program are sizable and the public protection gained by this expenditure is now vanishingly small; and

Whereas, The unnecessary delays and inconveniences to betrothed individuals are significant; now, therefore, be it

Resolved, That the Arizona Medical Association introduce legislation to discontinue the requirement for premarital syphilis serology testing.

Adopted as Amended
May 21, 1983

Resolution 6-83

Subject: Arizona Health Care Cost Containment system (AHCCCS)

Resolved, That the Board of Directors through the appropriate committees continue to monitor the AHCCCS program and accumulate data, with emphasis on quality of care, fiscal accountability and some recognition of the inadequate eligibility standards presently in law, as well as the difficulties experienced by providers with the present administrator of AHCCCS.

Substitute Resolution Adopted
May 21, 1983

Resolution 7-83

Subject: Joint Commission on Accreditation of Hospitals—Medical Staff Standards

Whereas, The recent revisions of the Accreditation Manual for Hospitals proposed by the Board of Commissioners of the Joint Commission on Accreditation of Hospitals as regards the Medical Staff standards, changing Medical Staff to Organized Staff, can only result in a decline in the accepted standards of professional performance in the hospital and thereby a decline in the quality of professional care to the patient; and

Whereas, It is the responsibility of the practicing physicians to, above all else, support and improve the quality of medical care for all our patients and oppose vigorously those measures that undermine the standards and quality of that care; now, therefore, be it

Resolved, That the Arizona Medical Association notify the Joint Commission on Accreditation of Hospitals that we vigorously oppose proposed changes regarding the medical staff in the January 1, 1983 JCAH Accreditation Manual for Hospitals, and that the American Medical Association and national as well as state specialty societies be advised of ArMA's position; and be it further

Resolved, That the ArMA Delegates to the American Medical Association be instructed to support the continuation of the medical staff as having responsibility for quality of care of patients in the hospital.

Substitute Resolution Adopted as Amended
May 21, 1983

Resolution 8-83

Subject: Proliferation of Institutional Outpatient Clinics

Whereas, Hospitals and other corporate providers of health care services are rapidly expanding their outpatient facilities; and

Whereas, These facilities are reimbursed by third party payors with a facilities fee at a rate far in excess of fees paid in a private practitioner's office for the same service; and

Whereas, These facilities are often established as "loss leaders" to feed patients into the parent hospital(s); and

Whereas, Some of these facilities are staffed by hospital subsidized physicians; and

Whereas,These practices result in unfair competition to the private practice of medicine; and

Whereas, These practices unnecessarily escalate costs for the public directly by third party payment of facilities fees and indirectly by avoidance of taxes; therefore, be it

Resolved, That the Arizona Medical Association undertake to express to third party payors its position that outpatient facilities of hospitals and other corporate providers should receive the same reimbursement as private medical practitioners for the same services; and be it further

Resolved, That the Arizona Medical Association seek legislation to limit or eliminate any favorable tax treatment afforded to institutional providers to the extent they enter into direct competition with private medical practitioners.

Substitute Resolution Adopted
May 21, 1983

Resolution 9-83

Subject: "Good Samaritan" Law

Whereas, One of the great character and health builders for our youth is nonprofessional athletics, ranging from Little League games to college contests; and

Whereas, A significant group of physicians in Arizona and many other states contribute their time as team physicians whereby they attend many school and other nonprofessional athletic events and, if an accident occurs, render the best immediate emergency care they can to injured players; and

Whereas, The opinion of the Judicial Council of the American Medical Association state that physicians should "respond to requests for assistance in an emergency whenever temperate public opinion expects the service," and

Whereas, Whether and under what circumstances team physicians and others are protected by the Arizona Good Samaritan law and, therefore, responsible only for gross negligence has been unclear; now, therefore, be it

Resolved, That the Legislative Committee of the Arizona Medical Association be directed to work with the Sports Medicine Section of the Professional Committee to consider possible legislative remedies for the protection from all claims for ordinary negligence for team physicians and others who donate their time providing emergency care at public gatherings, including athletic contests.

Adopted
May 21, 1983

Resolution 10-83

Subject: Present Status of the Arizona Medical Practice Act and its relationship to the Para-Medical Specialties

Whereas,The Medical Practice Act (M.P.A.) was reevaluated by the Arizona Legislature in 1982 as required by the Sunset Law. The definition of the practice of medicine was restated as follows: "Means the diagnosis, the treatment or the correction of, or the attempt to, or the holding of oneself out as being able to diagnose, treat, or correct any and all human diseases, injuries, ailments, infirmaties, deformities, physical or mental, real or imaginary, by any means, methods, devices or instrumentalities, except as the same may be among those acts or persons not affected by this chapter. The practice of medicine includes the practice of medicine alone or the practice of surgey alone, or both."

Four aspects of medical practice have been legally restricted to the professionally trained person, i.e., M.D. or D.O. These are Diagnosis, the use of Prescription Drugs, Surgery, and Ionizing Radiation. Actual day-to-day application of the M.P.A. has been limited to the truly fraudulent or unscrupulous practitioner. Nonprofessional healers at times operate within the boundary of the Act, but either because of apparent lack of injury to the patient-client, or the impossibility of really detecting such omission or commission, the M.P.A. exists more as a restraint against unscrupulous medical practice rather than as a completely enforceable statute.

This situation is, however, commonly seen in other legal entities, e.g., the 55-mile speed limit wherein, in day-to-day actually, many citizens drive in excess of this limit with only a small percentage actually being apprehended and fined. Nevertheless, the net effect of the law has been to markedly reduce the loss of life due to vehicle injury on the highway, i.e., the law serves as a reasonable restraint; and

Whereas, Many of the para-medical, professional or scientifically oriented specialists are seeking licensure or changed status via the Arizona State Legislature. These include social workers, occupational therapists, physical therapists, etc. ArMA supports the aspirations of these varied groups for a properly licensed and regulated status insofar as this should lead to the best possible patient care. It is, however, further affirmed that a physician be involved in all such licensure and in the actual, even though sometimes remote, supervision of that particular activity. Such licensure should be monitored finally through the Arizona Joint Board of Medical Examiners and Osteopathic Examiners.

New specialties, such as acupuncture, similarly properly described as to the scope and rationale of treatment and with an ongoing monitoring system should also be encouraged to seek licensure, but again under the overall aegis of the physicians involved; and

Whereas, The California Board of Medical Quality Assurance, which is analogous to the Arizona Board of Medica Examiners, studied the problem of change in the M.P.A. in California as it might apply to the practice of the Natura Healing Arts. That study extended over a three-year period and a rather extensive expenditure of public funds was made. This study was accomplished via the services of the Public Affairs Research Group (P.A.R.G.) of Sacramento The P.A.R.G. report, dated November 1982, restates the need for maintenance of the four pillars of practice as stated above. In particular this document emphasizes that Diagnosis must be included because of the potential for serious patient harm resulting from incorrect Diagnosis, or failure to properly Diagnose serious conditions, is so great that there is a clear need to provide State sanctions against those who Diagnose without proper training or knowledge. Their suggested amendment is that "any person who diagnoses any disease, injury, or disfigurement of; performs surgery or otherwise severs or penetrates the tissues of; prescribes any drug which requires a prescription under Federal or State law; performs instrumentation beyond the vagina, mouth or anus of; or uses or orders the use of ionizing radiation upon any person without having at the time of so doing a valid unrevoked or unsuspended certificate as provided in this chapter or without being authorized to perform such act pursuant to certification obtained in the courts or some other provision of the law is guilty of a misdemeanor."

The rationale for this concept was partially based on criteria established by the Federal Department of Health Education and Welfare assaying whether an occupation should be licensed or otherwise regulated: "1) in what way will the unregulated practice of the occupation clearly endanger the health, safety and welfare of the public; and, 2) is the potential for harm usually recognizable and not remote and dependent on tenuous argument." Other admonitions were included in the H.E.W. statement but these were the most germaine; and

Whereas, On consideration of the above the Board of Directors of the Arizona Medical Association has voted, on January 22, 1983, to uphold the current Medical Practice Act and thus sustain their primary goal of providing optimal health and medical services to the citizens of Arizona; now, therefore, be it

Resolved, That 1) the Arizona Medical Association continue to uphold the current Medical Practice Act and 2) a physician be involved in the licensure, and in the actual, even though sometimes remote, supervision of all professionally related paramedical specialists.

Adopted
May 21, 1983

Resolution 11-83
Subject: Annual Preparticipation Sports History and Physical Examinations
Resolution 12-83
Subject: Arizona Interscholastic Sport Preparticipation History and Physical Form
Resolution 13-83
Subject: Health Insurance for High School Athletes

The three resolutions were considered together since all were on related subjects, resulting in a substitute Resolution 11-83 as Follows:

Resolved, That the Sports Medicine Section of the Professional Committee be instructed to give consideration o the need and frequency of sport preparticipation history and physical examinations and the appropriate form for these evaluations, with report back to the Board of Directors.

Substitute Resolution 11-83 Adopted
May 21, 1983

There being no further business before the House of Delegates,
Meeting adjourned Sine Die at 10:22 a.m.

Photo Credit:
Eloise Clymer
Bob Hitchcock

Past President John Oakley (Prescott), President-Elect Earl Baker (Phoenix), President Neopito Robles (Tucson), Vice President Gary Henderson (Tucson), Treasurer Robert S. Hirsch (Tucson) and Secretary Richard Collins (Scottsdale)

Drs. John Boyer and Stuart Holtzman, Tucson

ArMA Secretary Richard E. Collins, M.D., and Mary Lee Collins, Immediate Past President, ArMA Auxiliary

Drs. Arthur V. Dudley, Lee Schultz and Earl Baker

Dr. and Mrs. James Blute, III, Tucson

Drs. James S. Pucelik and Ronald L. Christ, Yuma

Resident Physician Section Delegates Mary E. MacGuire, M.D. and John E. Boulet, M.D., Maricopa Medical Center. In the background, Drs. Max Wertz and Donald R. Miles, Phoenix

Alternate AMA Delegate Franklin D. Loffer, M.D., congratulates John C. Bull, Jr., M.D., new Central District Director

Cochise County Delegates Seneca Erman, Richard Weyer, and Paul Lenio

Dr. and Mrs. George Hoffmann, Mesa

President-Elect Earl Baker with Past Presidents Clyde W. Kurtz and John Clymer

Drs. Richard E. Collins, Richard Zonis, Scottsdale, and John Kerr, Mesa

Arizona Medicine Editor Marshall B. Block, M.D.

Central District Director Wilfred M. Potter, M.D., and Maricopa County Delegate, Tom D. Powell, M.D.

Drs. Max Wertz (Phoenix) and Richard Flynn (Tempe)

Central District Director Howard S. Gray, M.D., with Arizona Psychiatric Society Delegates James Hill, M.D., and James Jarvis, M.D.

Walt and Hilary Sosey, Mohave County

Dr. and Mrs. Lovett and Dr. and Mrs. Paul Relling, Tucson

Betty (Mrs. Torrence) Payne, AMA Auxiliary President; Mary Eleanor (Mrs. H. Howard) Holmes, ArMA Auxiliary President-Elect; Jan (Mrs. Luiz) Lisboa, ArMA Auxiliary President; Mary Lee (Mrs. Richard L.) Collins, Immediate Past President, ArMA Auxiliary

Drs. John Kahle and Michele Lundy, Flagstaff

Drs. Seneca Erman, N. L. Robles and Robert Hirsch

ArMA Directors Christopher Maloney and William Neubauer of Tucson and Kenneth Dregseth of Sierra Vista

1983 A. H. Robins' Community Service Award Winner Darwin W. Neubauer, M.D. and Mrs. Neubauer

Pima County Delegates

Drs. Alex Newman and Clyde W. Kurtz, Phoenix

Maricopa County Delegate

Year Club honoree V. Eugene Frazier, D., Mesa, with Dr. Robles

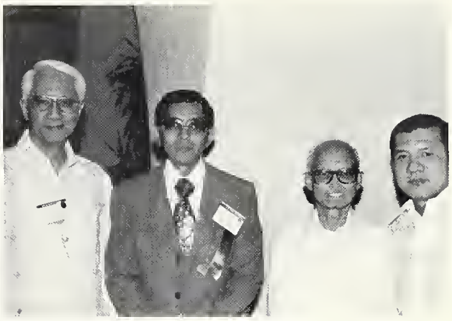
arwin W. Neubauer, M.D., Tucson, receives e coveted A. H. Robins' Physician Award for ommunity Service from ArMA President obles

rMA Auxiliary President Mary Lee Collins esents Dr. Louis J. Kettel, Dean of the U. of College of Medicine, with the Auxiliary nnual AMA-ERF grant

Drs. Robles and Oakley at the Awards dinner

Guy B. Atonna, M.D., Douglas, receives his 50 Year Club award from Dr. Robles

Dr. Robles presents Dr. Oakley's presidential portrait to Helen Oakley



Drs. M. M. Ebalo, Jr., Scottsdale; Manuel Guerrero, Casa Grande; B. V. Simuangco, Sun City; and C. R. Ballecer, Phoenix

ArMA Reports

The minutes appearing in this section have been condensed. A complete copy of them will be sent to any member requesting one.

EXECUTIVE COMMITTEE

The Executive Committee met on May 20, 1983.

The committee discussed the recent resignation of James E. Sarn, M.D. as Director of the Arizona Department of Health Services to accept a position with the Agency for International Development with the United States State Department.

It was unanimously agreed that a letter be sent, over the President's signature, congratulating Dr. Sarn on his new position and conveying the Association's thanks and appreciation for his cooperation and the mutually beneficial relationship which had been maintained between the Department and ArMA during his term as Director.

Bruce Robinson updated the committee on the inquiries into care in state penal institutions. He said that inquires which were begun at the request of BOMEX and the committee were dropped when BOMEX sent notification advising that, according to Dr. Harrison Baker, Clinical Director of the Deparment of corrections, the initial problems were being solved. The committee discussed the issue and determined that Dr. Richard O. Flynn, because of previous activity in this area, be requested to inquire about the existance of poor care being delivered at penal institutions in the state and report back to the committee.

The committee received and reviewed the recommendation of the Ad Hoc Committee on Hospital Services relative to the Proposed Hospital Cost Communications Plan of the Arizona Hospital Association and determined to refer the matter to the Board of Directors for action during the meeting on May 20, 1983.

It was moved and carried to approve the following schedule of meetings for the Executive Committee during the 1983-84 year:

July 22, 1983; Friday; 6:30 p.m.; Phoenix.

August 19, 1983; Friday; 6:30 p.m.; Phoenix.

September 23, 1983; Friday; 6:30 p.m.; Phoenix.

October 29, 1983; Saturday; 7:00 a.m.; Tucson.

November 18, 1983; Friday; 6:30 p.m.; Phoenix.

December 16, 1983; Friday; 6:30 p.m.; Phoenix.

January 20, 1984; Friday; 6:30 p.m.; Phoenix.

February 24, 1984; Friday; 6:30 p.m.; Phoenix.

March 23, 1984; Friday; 6:30 p.m.; Phoenix.

April 27, 1984; Friday; 7:00 a.m.; Scottsdale.

BOARD OF DIRECTORS

The Board of Directors met on May 20, 1983.

Dr Meredith addressed the Board speaking of the need for continued membership growth in ArMPAC if it was to have an impact in the legislature. He also told the Board of his visits to various county societies and medical staff meetings. Dr. Richard Zonis and Edward Jacobson, Esq. both commented briefly in support of Dr. Meredith's statements.

Dr. Kettel spoke on the ongoing activities at the U. of A. College of Medicine in student programs and the progress being made in the Cancer Center. He also explained the intent of the AMA's Health Policy Agenda for the American People and the role he would play as chairman of the work-group on education.

The Board reviewed a letter from the Board of Medical Examiners conveying an open invitation to attend all BOMEX and Joint Board meetings, which had been referred to it for consideration by the Executive Committee. There was discussion and it was determined that the matter should be returned to the Executive Committee for further study and recommendaiton.

It was moved and carried to approve the following as the 1983-84 schedule of meetings for the Board of Directors:

August 20, 1983; Saturday; 10:00 a.m.; Phoenix.

October 29, 1983; Saturday; 9:00 a.m.; Tucson.

January 21, 1984; Saturday; 10:00 a.m.; Phoenix.

March 24, 1984; Saturday; 10:00 a.m.; Phoenix.

April 27, 1984; Friday; 8:00 a.m.; Scottsdale.

April 28, 1984; Saturday; 12:00 noon; Scottsdale.

Mr. Robinson's report on a meeting with the Board of Directors of the Arizona Hospital Association and their proposed hospital cost communications plan was received by the Board. Also received was a letter from the Arizona Chapter of the Western Orthopaedic Association declining the invitation to participate in ArMA's House of Delegates.

It was moved and carried to ratify and approve the minutes of the Executive Committee meetings held March 25, 1983 and April 22, 1983.

The Board reviewed the Executive Committee's referral of a tentative proposal for a statewide PRO jointly developed by ArMA and the Arizona Osteopathic Medical Association; however, it was determined, because there are currently osteopathic members in the two existing PSROs, the joint relationship already existed and no action was taken.

It was moved and carried to accept for information the letter from the New Mexico Foundation for Medical Care dated April 29, 1983, inquiring about the possibility of establishing an interstate inpatient professional review capability for private review patients.

The Board discussed at great length the activities of the two existing PSROs in Arzona as well as the earlier action of the Board expressing ArMA's interes in participating in the PRO program which would be implemented under the Peer Review Improvement Act of 1982. It was moved and carried to supoprt an application that represents the joint and cooperative effort of the two existing PSROs (Northern Arizona Medical Evaluation System and Greater Southern Arizona PSRO) to create a PRO for the state of Arizona.

The Board reviewed the April 22, 1983 recommendation of the Executive Committee relating to ArMA's participation with the Arizona Hospital Association in its proposed hospital cos communications plan and, following a lengthy discussion, it was moved and carried that ArMA, independently, continue to develop its own program for controlling health care costs, encouraging liaison with other groups pursuing the same goals, without sacrificing patient care.

The Board extended its appreciation to Rudolf Kirschner, M.D., for his thoughtful service to the Arizona Medical Association and, following discussion it was moved and carried that the Arizona Medical Association initiate a practice of presenting to departing Board members a certificate of appreciation for their devotion and efforts on behalf of the Board, the Association and the membership.

BENEVOLENT AND LOAN FUND COMMITTEE

The Benevolent and Loan Fund Committee met on May 21, 1983.

Dr. Dudley reviewed the source of Benevolent and Loan Fund Committee and funds expended as regular and emergency grants to medical students.

Dr. Dudley mentioned that Dr. Baker had asked the committee to consider providing $200-$250 a month for a year to assist in rehabilitating a schizophrenic physician. Dr. Baker will be sending more information to be distributed to committee members. Some of the members present indicated some concern that the Benevolent and Loan Fund Committee funds be used in his manner.

Some years ago the committee provided $200 to a doctor's widow who was hospitalized and needed financial assistance. This was felt to be an acceptable use of funds administerd by he committee.

The Foundation was discussed. Mention was made of a large legacy which is intended for the Foundation at a future date. It has been stipulated hat those funds be used only for assistance to medical students.

Members reviewed grant applications eceived to date. It was pointed out hat grants are given to Arizona esidents only, but they may attend any accredited medical school. It was also noted that several of this year's applicants had applied for and received grants last year.

Grants have been awarded for several years, but as yet no monies have been donated by past recipients. The letter to grant recipients now asks them to consider paying back the grant amount when they begin practice, so it may be a type of revolving fund. Since the time apse from grant of funds to completion of postgraduate training is many years, uch paybacks would be some years hence.

All grant applications will be sent to Dr. Goldner in June for his screening and recommendations as to the distribution of grant funds.

It was moved and carried to uthorize $25,000 for grants in the mount of $750 each, according to priority of those grants in need at the discretion of Drs. Goldner and Dudley.

BOARD OF DIRECTORS

The Board of Directors met on May 1, 1983. It was moved and carried to onfirm the following committee ppointments:

Note: The single asterisk indicates reappointments. The double asterisk indicates new appointments. Those without asterisks are previous year ppointments whose terms are still in ffect. They are listed here for nformation only.

Articles of Incorporation and Bylaws Committee

Charles E. Henderson, M.D.*	1981-84
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Philip E. Dew, M.D.*	1983-86
Paul B. Jarrett, M.D.	1981-84
John K. Kerr, M.D.	1982-85
James Liguori, M.D.**	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Edward Sattenspiel, M.D.	1981-84
William C. Scott, M.D.	1982-85
Houshang Semino, M.D.**	1983-86
Neil O. Ward, M.D.*	1983-86

Benevolent and Loan Fund Committee

Arthur V. Dudley, Jr., M.D.*	1982-85
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
William L. Bunting, M.D.	1981-84
Richard L. Collins, M.D.	1982-84
Secretary	
Daniel C. DeBoer, M.D.	1982-85
Andrew M. Goldner, Ph.D.	1982-85
Robert S. Hirsch, M.D.	1983-85
Treasurer—Specified	
Marcus M. Marble, Jr., M.D.	1982-85
George S. Naifeh, Jr., M.D.	1981-84
Neopito L. Robles, M.D.	1983-84
President	
Cecil C. Vaughn, Jr., M.D.	1982-85
Richard D. Zonis, M.D.	1981-84

Environmental Health Committee

Willis A. Warner, M.D.*	1981-84
Chairman	1983-84
Herbert K. Abrams, M.D.	1981-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Robert E. Eckardt, M.D.	1981-84
Geraldine L. Freeman, M.D.**	1983-86
Richard Ilka, M.D.**	1983-86
Norman A. James, M.D.	1981-84
Louis C. Kossuth, M.D.**	1983-86
Jay B. Lavine, M.D.**	1983-86
Edward J. Lefeber, Jr., M.D.**	1983-86
Lloyd T. Lorbeer, M.D.	1982-85
Darwin L. Richardson, M.D.**	1983-86
Richard M. Riedy, M.D.**	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Donald C. Waugh, M.D.	1982-85
Hugh B. Woodward, M.D.**	1983-86

Finance Committee

Robert S. Hirsch, M.D.*	1983-85
Chairman	
Treasurer—Specified	
Earl J. Baker, M.D.	1983-84
President-Elect	
L. Philip Carter, M.D.	1981-84
John T. Clymer, M.D.	1982-85
Richard L. Collins, M.D.	1982-84
Secretary	
Clifford D. DeBenedetti, M.D.	1982-85
Richard L. Dexter, M.D.	1982-85
John W. Kennedy, M.D.*	1983-86
James B. Klein, M.D.**	1983-86
Robert F. Lorenzen, M.D.	1981-84
Christopher T. Maloney, M.D.*	1983-86
William N. Neubauer, M.D.**	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Seymour I. Shapiro, M.D.*	1983-86
Walter K. Sosey, M.D.	1981-84
Harold C. Tretbar, M.D.	1981-84

Governmental Services Committee

H. Belton P. Meyer, M.D.	1981-84
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Daniel J. Condon, M.D.**	1983-86
Robert F. Crawford, M.D.	1981-84
Lattimer H. Ford, M.D.	1981-84
James M. Hurley, M.D.**	1983-86
Louis J. Kossuth, M.D.*	1983-86
Donald R. Miles, M.D.	1981-84
William J. Moore, M.D.	1982-85
Leonard F. Peltier, M.D.	1981-84
Neopito L. Robles, M.D.	1983-84
President	
Robert St. John, M.D.	1982-85
Anthony F. Vuturo, M.D.	1982-85
George S. Woodard, Jr., M.D.	1981-84

Grievance Committee

John E. Oakley, M.D.*	1983-84
Chairman	
Past President—Specified	
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Philip E. Dew, M.D.	1981-84
Morton H. Dubnow, M.D.	1981-84
Arnold H. Dysterheft, M.D.	1981-84
Robert L. Fox, M.D.	1981-84
David E. Glow, M.D.*	1983-86
Manuel Ma. Guerrero, III, M.D.	1982-85
Stuart I. Holtzman, M.D.**	1983-86
James N. Lane, M.D.*	1983-86
Stephen R. Rakower, M.D.**	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Stanley R. Shorb, M.D.	1981-84
Louis E. Young, M.D.**	1983-86

Health Manpower Committee

Laurence M. Linkner, M.D.	1982-85
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Henry Bock, M.D.	1982-85
Richard L. Collins, M.D.	1982-84
Secretary	
Bruce N. Curtis, M.D.*	1983-86
Marilyn J. Heins, M.D.	1981-84
Phillip W. Kantor, M.D.**	1983-86
F. C. Lepperd, Jr., M.D.	1981-84
Marcus M. Marble, M.D.	1982-85
Alex Newman, M.D.	1981-84
Sara S. Reynolds, M.D.*	1983-86

Gordon L. Ritter, D.O.	1982-85
Neopito L. Robles, M.D.	1983-84
President	
Melvin I. Roth, M.D.*	1983-86
Gary Waddington, M.D.	1982-85
R. Wayne Wood, M.D.	1982-85

Legislative Committee

Clyde W. Kurtz, M.D.*	1982-85
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Stanley Brysacz, D.O.	1983-86
W. Scott Chisholm, M.D.	1982-85
Richard L. Collins, M.D.	1982-84
Secretary	
Robert T. Daehler, M.D.*	1983-86
Richard Darby, D.O.*	1983-86
Kenneth A. Dregseth, M.D.	1981-84
Richard O. Flynn, M.D.	1981-84
Lawrence Green, M.D.*	1983-86
Gary L. Henderson, M.D.**	1983-86
Duayne T. Hutchinson, M.D.	1982-85
Louis J. Kettel, M.D.	1981-84
Robert E. Kravetz, M.D.**	1983-86
George Lastnick, M.D.	1981-84
Jonathan M. Levy, M.D.**	1983-86
William J. Mangold, Jr., M.D.**	1983-86
Richard McGill, D.O.	1981-84
Joseph B. McNally, M.D.**	1983-86
James R. Meador, Jr., M.D.	1982-85
H. Belton P. Meyer, M.D.	1983-86
Thomas F. Moore, M.D.	1981-84
William N. Neubauer, M.D.	1982-85
Monte C. Nowak, M.D.**	1983-86
John E. Oakley, M.D.*	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Frederic L. Ruskin, M.D.*	1983-86
Robert D. Sanford, M.D.	1982-85
Edward Sattenspiel, M.D.*	1983-86
James L. Schamadan, M.D.	1981-84
William C. Scott, M.D.	1982-85
Walter K. Sosey, M.D.**	1983-86
Burt S. Strug, M.D.	1981-84
Thomas H. Taber, Jr., M.D.	1982-85
Herbert L. Winograd, M.D.**	1983-86

Long-Range Planning Committee

Gary L. Henderson, M.D.	1983-84
Chairman	
Vice President—Specified	
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Richard L. Dexter, M.D.	1982-85
Alan L. Gordon, M.D.	1982-84
Laurence M. Linkner, M.D.**	1983-86
Christopher T. Maloney, M.D.**	1983-86
H. Belton P. Meyer, M.D.	1982-85
George M. Nickas, M.D.**	1983-86
Laurance B. Nilsen, M.D.	1982-85
Wilfred M. Potter, M.D.*	1983-86
Neopito L. Robles, M.D.	1983-84
President	

Maternal and Child Health Care Committee

William C. Scott, M.D.*	1982-85
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Frederick W. Baum, M.D.	1981-84
Wayne E. Beck, M.D.**	1983-86
James F. Blute, III, M.D.	1982-85
William H. Burke, M.D.	1982-85
William Carlile, M.D.	1981-84
Michael S. Clement, M.D.	1981-84
Richard L. Collins, M.D.	1982-84
Secretary	
Jorge A. Covarrubias, M.D.	1982-85
Scott Crawford, M.D.	1982-85
Richard M. Cummins, M.D.**	1983-86
William J. Daily, M.D.*	1983-86
Jack H. Demlow, M.D.	1981-84
Vincente O. Enciso, M.D.**	1983-86
Joseph W. Hanss, Jr., M.D.**	1983-86
John V. Kelly, M.D.*	1983-86
Ravi Koopot, M.D.	1982-85
Walter K. Lippard, M.D.	1981-84
Lester E. Mayes, Jr., M.D.	1982-85
H. Belton P. Meyer, M.D.	1982-85
Sister Alice Montgomery	1982-85
William J. Moore, M.D.	1982-85
William G. Payne, M.D.	1981-84
Jogeswar Rath, M.D.	1982-85
Hermann S. Rhu, Jr., M.D.	1981-84
Neopito L. Robles, M.D.	1983-84
President	
Lewis S. Shenker, M.D.	1982-85
William A. Susong, M.D.	1982-85
Louis S. Tan, M.D.**	1983-86
Herbert L. Winograd, M.D.*	1983-86
John R. Young, M.D.	1981-84
Donald J. Ziehm, M.D.	1982-85

Medical Economics Committee

William G. Chaffee, M.D.	1983-86
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
James R. Callison, M.D.*	1983-86
Sam C. Colachis, Jr., M.D.	1981-84
Richard L. Collins, M.D.	1982-84
Secretary	
William E. Crisp, M.D.**	1983-86
Richard H. Daley, M.D.	1981-84
Thomas W. Glenn, M.D.	1981-84
Samuel Goldfein, M.D.**	1983-86
Edwin G. Goldstein, M.D.	1981-84
Lucy S. Hernried, M.D.*	1983-86
John F. Kahle, M.D.	1981-84
Laurence M. Linkner, M.D.	1981-84
Bruce A. Mallin, M.D.	1981-84
William S. Nevin, M.D.**	1983-86
Jeffrey A. O'Connor, M.D.	1982-85
Joseph N. Portnoy, M.D.	1982-85
Neopito L. Robles, M.D.	1983-84
President	
Ernesto B. Rodis, M.D.	1982-85
Richard A. Silver, M.D.	1982-85
Sol Z. Weinzweig, M.D.	1982-85
John A. Wilson, M.D.	1981-84
R. Jack M. Zeluff, M.D.	1981-84

Medical Education Committee

Charles A. Trahern, M.D.*	1983-86
Chairman	1983-84
Robert M. Anderson, M.D.	1981-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
C. Phillip Daspit, M.D.**	1983-86
Gordon D. Davis, M.D.	1982-85
Kenneth A. Dregseth, M.D.	1982-85
Jack H. Dunn, M.D.	1982-85
Seneca L. Erman, M.D.	1982-85
Palmer C. Evans, M.D.	1982-85
Thomas J. Gannon	1983-86
Nathan W. Goff, Jr., M.D.	1982-85
Samuel Goldfein, M.D.	1981-84
Stuart M. Gould, Jr., M.D.	1981-84
Harry W. Hale, Jr., M.D.	1982-85
Robert E. Hastings, M.D.	1982-85
H. Peter Hernried, M.D.	1982-85
Stanley D. Johnsen, M.D.	1982-85
Kent K. Kleinkauf, M.D.	1982-85
Daniel J. Kuntz, M.D.	1982-85
Jack M. Layton, M.D.*	1983-86
Edward J. Lefeber, Jr., M.D.	1982-85
Donald E. McHard, M.D.	1982-85
George H. Mertz, M.D.	1981-84
Donald Mesec, M.D.**	1983-86
James R. Mouer, M.D.	1982-85
Alex Newman, M.D.	1982-85
Albert F. Olivier, M.D.**	1983-86
Kent L. Pomeroy, M.D.	1982-85
Robert A. Price, M.D.**	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Robert St. John, M.D.	1982-85
William Selezinka, M.D.	1982-85
Lawrence Z. Stern, M.D.	1981-84
Ashton B. Taylor, M.D.	1981-84
Bryan R. Updegraff, M.D.*	1983-86
Ben A. Vanderwerf, M.D.	1981-84
Albert G. Wagner, M.D.	1981-84
Walter S. Williams, M.D.	1981-84
George S. Woodard, Jr., M.D.	1981-84
Noel A. Yannessa, M.D.	1981-84

Physician's Health Committee

Thomas E. Bittker, M.D.*	1983-86
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Paul B. Borgesen, M.D.	1981-84
James E. Campbell, M.D.	1982-85
William G. Chaffee, M.D.**	1983-86
Richard L. Collins, M.D.	1982-84
Secretary	
Everett W. Czerny, M.D.	1982-85
Robert T. Dean, Jr., M.D.	1982-85
Dean L. Gerstenberger, M.D.	1981-84
Howard S. Gray, M.D.*	1983-86
James L. Kennedy, M.D.	1981-84
Howard W. Kimball, M.D.*	1983-86
Eugene J. Kinder, M.D.	1982-85
B. Ross Landess, M.D.*	1983-86
Laurence M. Linkner, M.D.	1981-84
Thomas J. Maxwell, M.D.**	1983-86
Patrick T. Phalen, M.D.*	1983-86
Tom D. Powell, M.D.**	1983-86
Hugh W. Randel, M.D.	1981-84
Sara S. Reynolds, M.D.*	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Stephen C. Scheiber, M.D.	1982-85
Houshang Semino, M.D.	1982-85
David Sherman, M.D.	1981-84
Michael S. Smith, M.D.	1982-85

Walter B. Tomlinson, M.D.	1982-85
Donald C. Waugh, M.D.	1983-86
Lincoln H. Westman, M.D.*	1983-86
Louis E. Young, M.D.*	1983-86

Professional Committee

William E. Cain, M.D.	1981-84
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Lloyd A. Coaker, M.D.**	1983-86
Richard L. Collins, M.D.	1982-84
Secretary	
Murray M. DeArmond, M.D.*	1983-86
Richard J. Flindall, M.D.	1982-85
Thomas P. Foerster, M.D.	1981-84
Robert L. Hagan, M.D.*	1983-86
Barry A. Kriegsfeld, M.D.	1981-84
William E. Kuchar, M.D.	1982-85
Donald B. Kunkel, M.D.	1982-85
James G. Lawson, M.D.	1982-85
Robert B. Mammana, M.D.**	1983-86
Warren L. Niccum, M.D.	1981-84
Tom D. Powell, M.D.*	1983-86
Howard J. Reuben, M.D.*	1983-86
Neopito L. Robles, M.D.	1983-84
President	
George J. Samuels, M.D.	1982-85
James B. Scott, M.D.	1982-85
Richard A. Silver, M.D.**	1983-86
William J. Thomas, M.D.	1981-84
Marguerite G. Wuebker, M.D.	1982-85
Leon Zeitzer, M.D.	1982-85

Public Relations Committee

John T. Clymer, M.D.*	1983-86
Chairman	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Marshall B. Block, M.D.*	1983-86
George F. Brown, M.D.	1981-84
Ronald L. Christ, M.D.	1981-84
Mrs. John T. Clymer*	1983-86
Richard L. Collins, M.D.	1982-84
Secretary	
John A. Davis, M.D.	1982-85
ulian DeVries	1981-84
Edwin G. Goldstein, M.D.	1981-84
Robert E. Kravetz, M.D.	1983-86
Eli J. Krigsten, M.D.	1982-85
Keith E. McReynolds, M.D.	1981-84
Allen B. Moore, M.D.	1982-85
Walter J. Nieri, M.D.	1982-85
Robert K. Phillips, M.D.**	1983-86
Neopito L. Robles, M.D.	1983-84
President	
Kent J. Rossman, M.D.**	1983-86
Ronald P. Spark, M.D.	1981-84
Stephen R. Stein, M.D.	1982-85
Andrew R. Thomas, M.D.**	1983-86

Publishing Committee

Marshall B. Block, M.D.*	1983-84
Chairman	
Editor-in-Chief—Specified	
Earl J. Baker, M.D.	1983-84
President-Elect	
Burnell R. Brown, M.D.	1981-84
George E. Burdick, M.D.	1981-84
Richard L. Collins, M.D.	1982-84
Secretary	
Kenneth B. Desser, M.D.	1981-84
Jay S. Fleishman, M.D.	1982-85
Benjamin K. Harris, M.D.	1982-85
Jonathan M. Levy, M.D.*	1983-86
William B. McGrath, M.D.	1981-84
Neopito L. Robles, M.D.	1983-84
President	
Jay W. Smith, M.D.	1981-84
Volker K.H. Sonntag, M.D.	1982-85
Sidney C. Werner, M.D.	1981-84

Scientific Assembly Committee

Wilber C. Voss, M.D.**	1983-86
Chairman	1983-84
Suresh C. Anand, M.D.	1982-85
Robert M. Anderson, M.D.**	1983-86
Earl J. Baker, M.D.	1983-84
President-Elect	
Dennis W. Berry, M.D.	1981-84
Marshall B. Block, M.D.	1982-85
James M. Byers, III, M.D.	1981-84
W. Scott Chisholm, M.D.	1982-85
Richard L. Collins, M.D.	1982-84
Secretary	
Boyden L. Crouch, M.D.	1982-85
George W. Drach, M.D.	1981-84
Jay S. Fleishman, M.D.	1982-85
Timothy R. Harrington, M.D.	1981-84
Thomas F. Hartley, M.D.	1981-84
Gary L. Henderson, M.D.	1983-84
Vice President—Specified	
Stuart I. Holtzman, M.D.	1982-85
Philip Levy, M.D.*	1983-86
Luiz S. Lisboa, M.D.*	1983-86
J. Daniel Morris, M.D.	1982-85
M. Herbert Nathan, M.D.*	1983-86
William S. Nevin, M.D.	1981-84
Alex Newman, M.D.	1981-84
Neopito L. Robles, M.D.	1983-84
President	
Marvin C. Schneider, M.D.	1982-85
Richard A. Silver, M.D.	1982-85
Donald P. Speer, M.D.	1981-84
Luis S. Tan, M.D.*	1983-86
Jerome H. Targovnik, M.D.	1981-84
Donald J. Ziehm, M.D.*	1983-86

ArMPAC Board of Directors

William N. Neubauer, M.D.**	1983-84
Paul L. Armerding, M.D.**	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Edwin G. Goldstein, M.D.**	1983-84
Mrs. Ronald Goodsite*	1983-84
Manuel Ma. Guerrero, III, M.D.*	1983-84
Efren N. Hufana, M.D.**	1983-84
James Liguori, M.D.**	1983-84
Don W. Longfellow, M.D.*	1983-84
Kenneth A. Lucas, M.D.*	1983-84
William J. Mangold, Jr., M.D.**	1983-84
Thomas F. Moore, M.D.*	1983-84
John E. Oakley, M.D.*	1983-84
Dwight H. Porter, Jr., M.D.*	1983-84
Mrs. Joseph H. Reno*	1983-84
Neopito L. Robles, M.D.	1983-84
President	
Jeffrey A. Singer, M.D.**	1983-84
Iain A.D. Todd, M.D.*	1983-84
Richard H. Weyer, M.D.*	1983-84
R. Wayne Wood, M.D.**	1983-84
Mrs. Hubert Wuesthoff*	1983-84

Ad Hoc Awards Committee

Richard L. Dexter, M.D.*	1983-84
Chairman	
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
John F. Kahle, M.D.*	1983-84
Clyde W. Kurtz, M.D.*	1983-84
Neopito L. Robles, M.D.	1983-84
President	

Ad Hoc Hospital Services Committee

Neil O. Ward, M.D., Chairman*	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Walter R. Eicher, M.D.*	1983-84
Norman F. Fee, M.D.*	1983-84
Gary L. Henderson, M.D.**	1983-84
Clyde W. Kurtz, M.D.*	1983-84
Paul T. Lenio, M.D.**	1983-84
Robert B. Leonard, M.D.*	1983-84
Peter H. Nutley, M.D.*	1983-84
Kenneth L. Raessler, M.D.**	1983-84
Neopito L. Robles, M.D.	1983-84
President	

Ad Hoc Indigent Health Care Committee

William C. Scott, M.D.*	1983-84
Chairman	
Earl J. Baker, M.D.	1983-84
President-Elect	
Richard L. Collins, M.D.	1982-84
Secretary	
Suzanne E. Dandoy, M.D.*	1983-84
William J. Dunn, M.D.**	1983-84
Marc L. Lee, M.D.*	1983-84
William S. Nevin, M.D.**	1983-84
Mary E. MacGuire, M.D.**	1983-84
John E. Oakley, M.D.*	1983-84
Neopito L. Robles, M.D.	1983-84
President	
Walter K. Sosey, M.D.*	1983-84
Herbert L. Winograd, M.D.*	1983-84

Ad Hoc Malpractice Insurance Crisis Committee

Edward Sattenspiel, M.D.*	1983-84
Chairman	
Jonathan E. Askew, M.D.*	1983-84
Earl J. Baker, M.D.	1983-84
President-Elect	
Lewis M. Brickler, D.O.*	1983-84
Jack E. Brooks, M.D.*	1983-84
John C. Bull, Jr., M.D.*	1983-84
Richard L. Collins, M.D.	1982-84
Secretary	
Richard O. Flynn, M.D.*	1983-84
Mark Gross, M.D.*	1983-84
Mark Ivey, Jr., M.D.*	1983-84
Paul T. Lenio, M.D.*	1983-84
Vernor F. Lovett, M.D.*	1983-84
Keith E. McReynolds, M.D.*	1983-84
Neopito L. Robles, M.D.	1983-84
President	
Robert V. Stephens, M.D.*	1983-84
Neil O. Ward, M.D.*	1983-84

It was moved and carried to refer to the Articles of Incorporation and Bylaws Committee a request that a bylaws change be prepared which would make the Ad Hoc Malpractice Insurance Crisis Committee a standing committee of the Arizona Medical Association, incorporating therein a name change for such committee by deletion of the word "crisis."

The members discussed at great length the concerns which are once again developing regarding continuation of county/state unified membership, particularly within Maricopa County and it was moved and carried to request Dr. Neil Ward to make another presentation to this Board and to the leadership of the Maricopa County Medical Society on the results of the 1981 study conducted regarding unified membership.

LEGISLATIVE COMMITTEE

The Legislative Committee met on June 11, 1983.

The committee briefly reviewed the final report of the legislative session as Dr. Kurtz presented it in his annual report to the House of Delegates. Mr. Walker discussed the "good" and "bad" news relating to the bills in which the committee actively participated. The members also discussed lobbying efforts, committee and member participation at the legislative level and involvement in ArMPAC, the combination of which would make ArMA a more effective organization. Dr. Kurtz solicited from the committee further recommendations of persons as liaison contacts with either county or specialty societies.

The committee reviewed and discussed the November 12, 1982 letter from the Professional Committee, together with correspondence from Frank Parks, Esq., requesting the committee to consider possible legislation to alter the Good Samaritan Law. In conjunction therewith the committee also reviewed Resolution No. 9-83 adopted by ArMA's House of Delegates on May 21, 1983, and took the following action.

It was moved and carried to provide to counsel for the Association the proposed amendments to A.R.S. § 32-1471 received from the Proessional Committee, requesting a formal opinion on same and, following receipt of same, Richard L. Collins, M.D. and Thomas P. Foerster, M.D. be requested to prepare draft legislation relating to the Good Samaritan Law for this committee's final review during its fall meeting.

It was agreed, on the basis of an offer from Thomas H. Taber, Jr., M.D., that, should Dr. Collins find his schedule prohibitive, Dr. Taber would assist Dr. Foerster in the finalization of such proposed legislation.

The committee discussed briefly the annual report of the Ad Hoc Malpractice Insurance Crisis Committee wherein reference was made to the necessity of certain malpractice reform legislation and heard from Dr. Sattenspiel, as chairman of that committee, regarding the various issues involved. The committee was informed that MICC did, in fact, have some bills in process and would be meeting sometime during the summer to finalize these for review by the Legislative Committee prior to submission during the next legislative session.

Resolution No. 8-83, which addressed the issue of expansion of outpatient facilities, unfair competition and escalation of costs and was adopted by ArMA's Hosue of Delegates during its May meeting, was reviewed by the committee. Additionally, Dr. Sattenspiel advised the members that similar issues would be considered by the AMA during its annual meeting later this month.

It was moved and carried that the action taken by ArMA's House of Delegates by adoption of Resolution No. 8-83 on May 21, 1983, relating to proliferation of institutional outpatient clinics, together with a copy of Report B of AMA's Council on Medical Services which will be considered and acted upon during the June meeting of the American Medical Association, be referred to the ArMA's Ad Hoc Committee on Hospital Services for further study and report back to the Legislative Committee with recommendations as to what, if any, legislative activity shoud be initiated.

The committee briefly reviewed Resolution No. 5-83, Discontinuance of Requirement for Premarital Syphilis Serology Testing, adopted by ArMA's House of Delegates during its May meeting and it was agreed that, since the resolution was originally submitted by the Arizona Society of Pathologists, Dr. William Neubauer would contact the officers of that society to determine specifically how they would like to proceed with any proposed legislation and would report back to this committee during its fall meeting.

Resolution No. 10-83, Present Status of the Arizona Medical Practice Act and Its Relationship to Para-Medical Specialists, adopted May 21, 1983, by ArMA's House of Delegates was received by the committee for information and Mr. Walker was requested to continue to monitor the activites here and in California and present an update to the committee during its fall meeting. Additionally, it was agreed that Dr. Baker and Mr. Walker would provide to the committee more complete background information on the subject which would include a portion of the report from California.

The members reviewed briefly Chapter 296, Laws 1983, Preserving the Lives of Newborns, and it was a consensus of opinion that continual study and eventual recommendations for improvement must be done by the committee. Along these same lines, Dr. Meyer informed the committee that the Scientific Assembly Committee had selected as one of its topics for the 1983-84 Current Perspectives series a program on "Bioethics," for which he and Dr. Chisholm were responsible for selection of speakers, etc. Dr. Meyer adivsed that the program is to be conducted on Saturday, October 15, 1983, in the ArMA building and that all speakers have agreed to make themselves available the preceding afternoon for cosultation on House Bill 2209 and the important issues involved. It was agreed that Drs. Meyer and Chisholm work closely with Mr.Walker in scheduling this consultation and developing a list of participants which would, hopefully, include key legislative people, physicians, hospital representatives and social workers. It is the intent that these discussions be the basis for recommendations to the Legislative Committee for future activities in this regard.

The committee discussed more in-depth participation by Auxilians in legislative activities, contacts and efforts and it was agreed that these individuals could play an extremely important part in improving the image of medicine and giving it a more effective voice in legislative matters.

It was moved and carried to request Thomas F. Moroe, M.D. and Mrs. Sylvia De Freitas to jointly develop guidelines for more in-depth participation by members of the Arizona Medical Association Auxiliary in the activities of the Legislative Committee and present the same at the fall meeting of the committee for its approval.

The committee discussed briefly the recent activities by the business coalitions within the state relative to cost containment; Dr. Neubauer indicated Tucson physicians were contacting businesses regularly in order to discuss a mutual concern regarding rising health care cots and that he would, in fact, be addressing the coalition in July; simlar activities in Maricopa County were also discussed and it was agreed that it would be most appropriate for leadership of the major county societies could meet and more thoroughly discuss efforts in this regard.

Future Medical Meetings

he following institutions and organizations have een accredited for their continuing medical ucation programs by the Arizona Medical ssociation and/or the Accreditation Council for ontinuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
 Lung Association
Walter O. Boswell Memorial Hospital,
 Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
 of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program,
 (THMEP) Tucson
University of Arizona College of Medicine,
 Tucson
Veterans Administration Medical
 Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above roduce a variety of continuing medical education rograms. Each accredited institution and rganization is responsible for designating which of hese programs meet ArMA's requirements for ategory 1 credit. Physicians who participate in rograms which are designated Category 1 by ccredited institutions will receive Category 1 credit oward the ArMA Certificate in CME and the AMA's hysician's Recognition Award.

JULY

Coconino County Medical Society Summer Medical Seminar
July 22-23. Little America Motor Hotel, Flagstaff, Arizona. Sponsor: Coconino County Medical Society, U. of A. College of Medicine. Contact: Nathan A. Benson, M.D., P.O. Box 392, Flagstaff, Arizona. Approved for 13 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
July 27-29. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Critical Care—Back to Basics
July 30. Arizona Biltmore Resort, Phoenix. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital Medical Center, 525 North 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

AUGUST

10th Annual Arizona Conference on Rural Health
August 5-6. Embry-Riddle Aeronautical University, Prescott, Arizona. Sponsor: ArMA, Arizona Nurses' Assn., Phoenix Indian Health Service, Region IX—National Health Service Service Corps. Contact: Christy Snow, Coordinator, Rural Health Office, 3131 E. 2nd Street, Tucson, Arizona 85716. Approved for hour per hour Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
August 24-26. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

SEPTEMBER

Advanced Cardiac Life Support Recertification/Provider
September 28-30. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Speech Pathology
September 30. Scottsdale Hilton, Scottsdale. Sponsor: St. Luke's Hospital and Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 North 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

OCTOBER

Emergency Update '83
October 6-7. Ramada TowneHouse, Phoenix. Sponsor: Phoenix Baptist Hospital and Medical Center. Contact: Sharon Luczu, Education Department, Phoenix Baptist Hospital and Medical Center, 6025 North 20th Ave., Phoenix, Arizona 85015. Approved for 12 hours of Category 1 credit and 15.6 Contact hours for nurses.

First Annual Arizona Child Custody Institute
October 7 & 8. Scottsdale Hilton, Scottsdale. Sponsor: Family Law Section and Law and Counselling Committee of the State Bar of Arizona, Family Law Committee of the Maricopa Bar Assn., St. Luke's Hospital and Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 N. 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

Advances in Therapeutics New Drugs
October 21-22. Poco Diablo Resort, Sedona. Soonsor: University of Arizona College of Medicine, Department of Internal Medicine, Office of Continuing Medical Education. Contact: Continuing Medical Education. U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 9.5 hours of Category 1 credit.

Central Neuropsychiatric Association-Sleep and Sleep Disorders
October 21 and 22. Camelback Inn, Paradise Valley. Sponsor: Camelback Hospital. Contact: Dr. George Peabody, 946-4228. Approved for 11 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
October 26-28. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona. Provider course approved for 21 hours of Category 1 and Recertification approved for 13 hours.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.— Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoneix, ARizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.
A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.
Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.
Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conf. Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.
Surgical Department CME
4th Friday, 7 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 86016. Contact: Medical Staff Secretary for additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.
Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

SECOND BIANNUAL SOUTH TEXAS CLINICAL DIABETES SYMPOSIUM

Hilton Palacio del Rio • San Antonio, Texas
October 27-29, 1983

SPONSORED BY: American Diabetes Association, Eli Lilly & Company, San Antonio Community Hospital, Ames Division of Miles Laboratories, Inc., The Upjohn Company, and The Diabetes and Glandular Disease of San Antonio.

OBJECTIVE: To familiarize the primary care physician with current research and its clinical application.

ACCREDITATION: As an organization accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education, the American Diabetes Association certifies that this continuing medical education offering meets the criteria for seven and one-half (7½) hours of ACCME Category I credits provided it is used and completed as designed.

This program has been reviewed and is acceptable for 7 (Elective) hours by the American Academy of Family Physicians.

COST: $75 for Professionals — $40 for Students

LIST OF TOPICS

Why Control Diabetes Mellitus & Which Patients Need Control?	Sherwyn L. Schwartz, M.D.
Type I Diabetes Mellitus Etiology & Approach to Control	Jay S. Skyler, M.D.
When & Why to Use a Pump or Transplant	Julio V. Santiago, M.D.
When Does an Ophthalmologist See My Patient?	James W. Speights, M.D.
When Should a Podiatrist See My Patient?	Richard A. Pollak, D.P.M.
Type II Diabetes Mellitus (Which pill or insulin & which diet?)	Jay S. Skyler, M.D.
Purified & Human Insulin - Pros & Cons	Jerome S. Fischer, M.D.
Pregnancy & Diabetes Mellitus — Gestational & Overt	Lois Jovanovic, M.D.

Also Covered:
What is a Diabetes Mellitus Team & How Does It Function?
Pediatric Emergencies & Day to Day Problems.
How to Use Home Glucose Monitoring & Glycosylated Hemoglobin.
A Potpourri of Practical Problems with Diabetes Mellitus — Travel, Illness, Surgery, etc.

CHAIRMAN: Sherwyn L. Schwartz, M.D.

For More Information Contact: Mr. Daniel Snare, Alamo Area Chapter, American Diabetes Association, P. O. Box 32635, San Antonio, Texas 78216. Phone: (512) 340-0400

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008
Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008.
Contact: Leonard Tamsky, M.D.
Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
1st & 3rd Monday, 12 Noon.
Medicine GI
2nd & 4th Monday, 12 Noon.
Medicine Dermatology
5th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Provlem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..
Review of GYN Pathology Slides
Weekly, Tuesday, 4 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Patholgy Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.
Medicine Hematology
2nd Wednesday, 12 Noon.
Medicine Mortality
3rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..

Anesthes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7 :30 a.m.
Anesthesiology Journal Club
4th Thursday, 8 a.m.
Ambulatory Pediatarics
Weekly, Thursday, 8 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8 a.m.
Burn Mortality Conference
4th Thursday, 8 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Friday, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12 :30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.
Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference Rm. A, Contact: N. Wendell Todd, M.D.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8 a.m., 1st Floor Con Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st floor Con Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
3rd Tuesday, 12 p.m., Contact: Wm. Monteforte.
Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 p.m., Contact: Kim Sowards.
Current Concepts in Medicine
Weekly, Tuesday, 12 p.m., Auditorium.
Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 p.m., Contact: S. Salmon, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ. Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Perinatal Conference
2nd Monday, 7:30 p.m., Contact: J. Lohman, M.D.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Surgical Dept. Conference
2nd Monday, 12 Noon, Contact: C. Peter Crowe, Jr., M.D.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.
Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact: Dr. Young.
Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.
Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.
Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.
Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.
Radiology Conference
1st Tuesday, 7:00 a.m.
Operation Outreach
2nd Tuesday, 6:30 p.m.
Pathology Conference
4th Tuesday, 7:00 a.m.
Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.
Anesthesiology Board Review Conference
2nd & 4th Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4-5 p.m., Room 5403.
Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.
Anesthesiology Resident Presentation
1st Monday, 4-5 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.
Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 p.m., HSC Auditorium, Contact: Cancer Center.
Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.
Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

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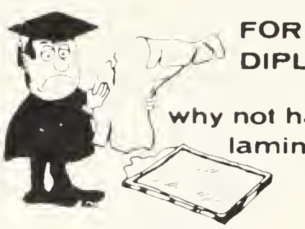

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England

References
1. Stone PH Turi ZG Muller JE Efficacy of nifedipine therapy for refractory angina pectoris *Am Heart J* 104 672-681 September 1982
2 Antman E Muller J Goldberg S et al Nifedipine therapy for coronary-artery spasm Experience in 127 patients *N Engl J Med* 302 1269-1273 June 5, 1980

BRIEF SUMMARY
PROCARDIA (nifedipine) **CAPSULES** For Oral Use

INDICATIONS AND USAGE. I. Vasospastic Angina PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria 1) classical pattern of angina at rest accompanied by ST segment elevation 2) angina or coronary artery spasm provoked by ergonovine or 3) angiographically demonstrated coronary artery spasm In those patients who have had angiography the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina provided that the above criteria are satisfied PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed e g where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and or adequate doses of beta blockers

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and or organic nitrates or who cannot tolerate those agents

In chronic stable angina (effort associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina but available information is not sufficient to predict with confidence the effects of concurrent treatment especially in patients with compromised left ventricular function or cardiac conduction abnormalities When introducing such concomitant therapy care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS Known hypersensitivity reaction to PROCARDIA

WARNINGS Excessive Hypotension: Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated occasional patients have had excessive and poorly tolerated hypotension These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers

Severe hypotension and or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker but the possibility that it may occur with PROCARDIA alone with low doses of fentanyl in other surgical procedures or with other narcotic analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated the physician should be aware of these potential problems and if the patient s condition permits sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery

Increased Angina: Occasional patients have developed well documented increased frequency duration or severity of angina on starting PROCARDIA or at the time of dosage increases The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate or from increased demand resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina probably related to increased sensitivity to catecholamines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is important to taper beta blockers if possible rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure. Rarely patients usually receiving a beta blocker have developed heart failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS. General. Hypotension Because PROCARDIA decreases peripheral vascular resistance careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested Close observation is especially recommended for patients already taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema: Mild to moderate peripheral edema typically associated with arterial vasodilation and not due to left ventricular dysfunction occurs in about one in ten patients treated with PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuretic therapy With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers The average increase was 45% Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured digitalis toxicity was not observed Since there have been isolated reports of patients with elevated digoxin levels it is recommended that digoxin levels be monitored when initiating adjusting and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis mutagenesis impairment of fertility When given to rats prior to mating nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity in rats embryotoxicity in rats mice and rabbits and abnormalities in monkeys

ADVERSE REACTIONS The most common adverse events include dizziness or light-headedness, peripheral edema nausea weakness, headache and flushing each occurring in about 10% of patients transient hypotension in about 5% palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication Additionally the following have been reported muscle cramps, nervousness, dyspnea, nasal and chest congestion diarrhea constipation, inflammation joint stiffness, shakiness sleep disturbances blurred vision difficulties in balance dermatitis pruritus urticaria fever sweating chills and sexual difficulties Very rarely introduction of PROCARDIA therapy was associated with an increase in anginal pain possibly due to associated hypotension

In addition more serious adverse events were observed not readily distinguishable from the natural history of the disease in these patients It remains possible however, that some or many of these events were drug related Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare mild to moderate transient elevations of enzymes such as alkaline phosphatase CPK LDH SGOT and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy is uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis possibly due to PROCARDIA therapy has been reported twice in the extensive world literature

HOW SUPPLIED. Each orange soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66) 300 (NDC 0069-2600-72) and unit dose (10×10) (NDC 0069-2600-41) The capsules should be protected from light and moisture and stored at controlled room temperature 59 to 77 F (15 to 25 C) in the manufacturer's original container

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Quotes from an unsolicited letter received by Pfizer from an angina patient.
While this patient's experience is representative of many unsolicited comments received, not all patients will respond to Procardia nor will they all respond to the same degree.

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"I have been able to do volunteer work...and feel needed and useful once again."

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for the varied faces of angina

Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
2) Angina where the clinical presentation suggests a possible vasospastic component.
3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

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Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact:
Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

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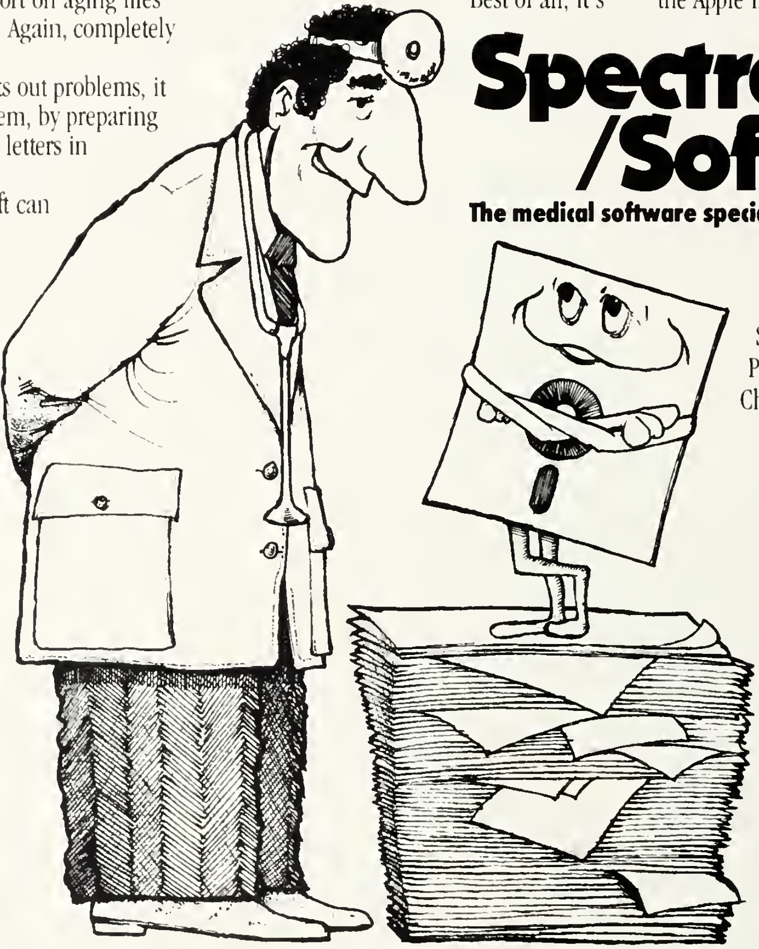

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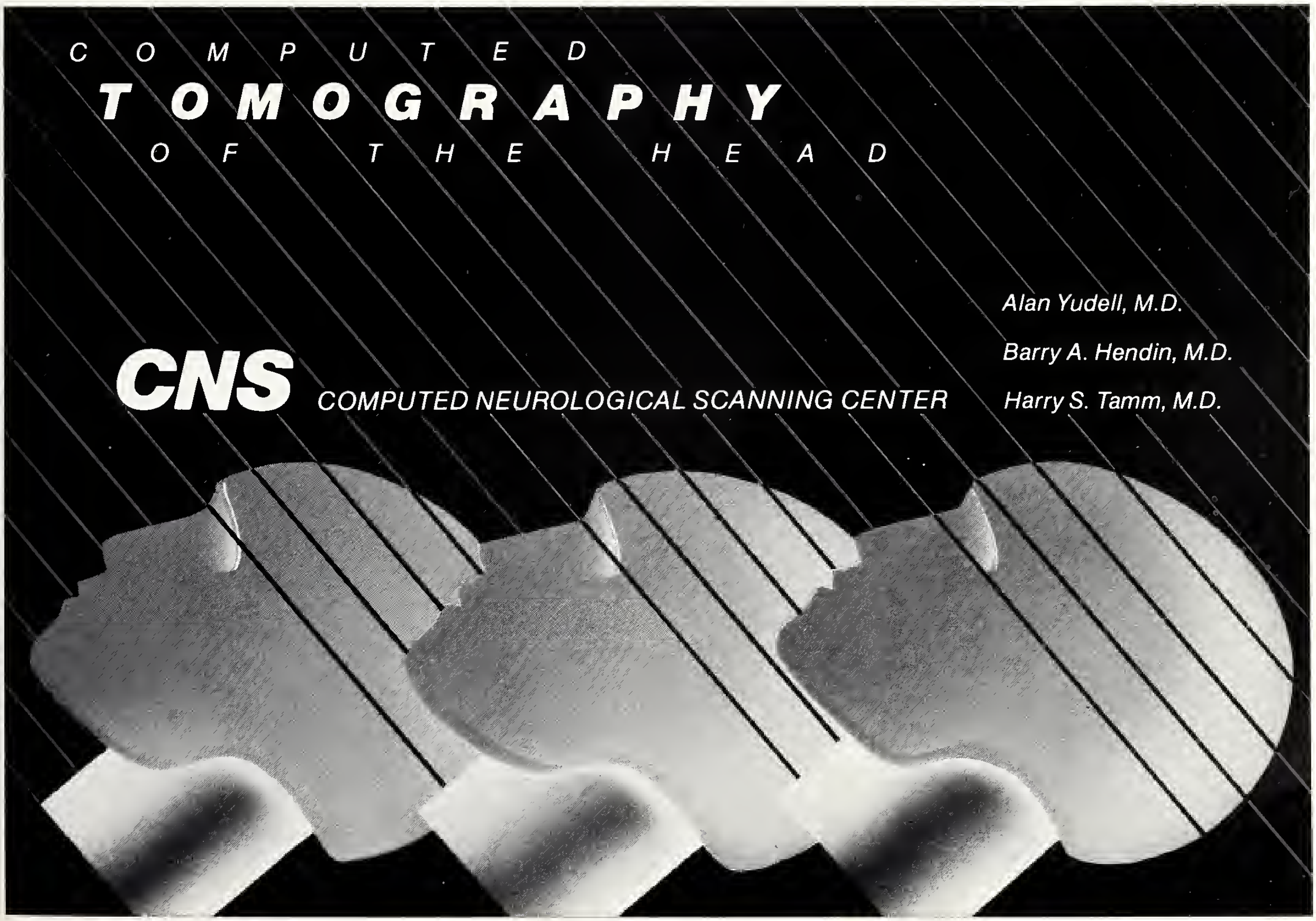

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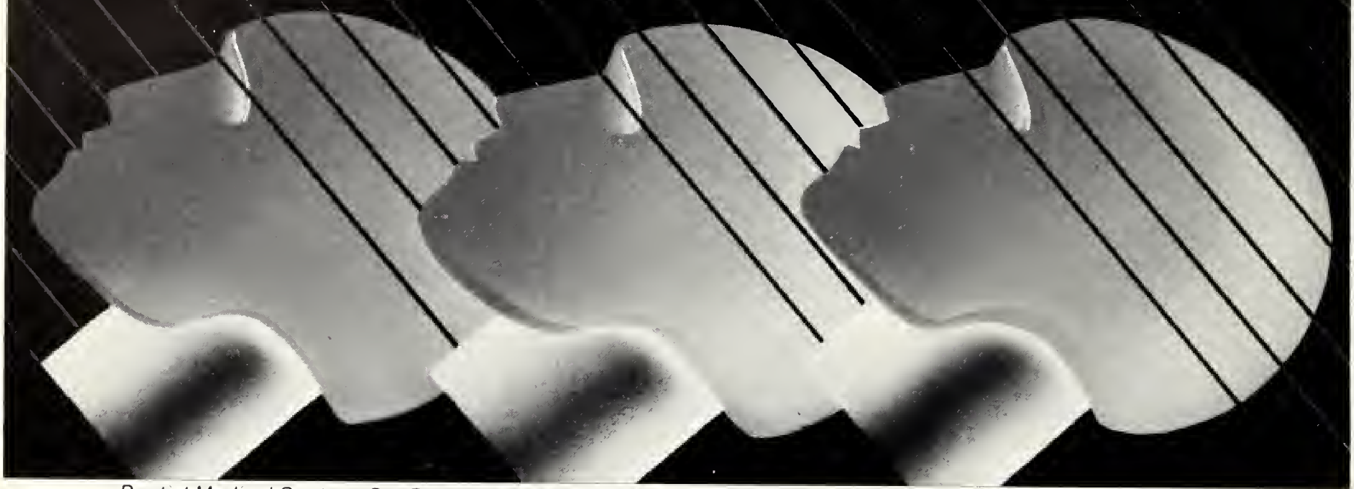

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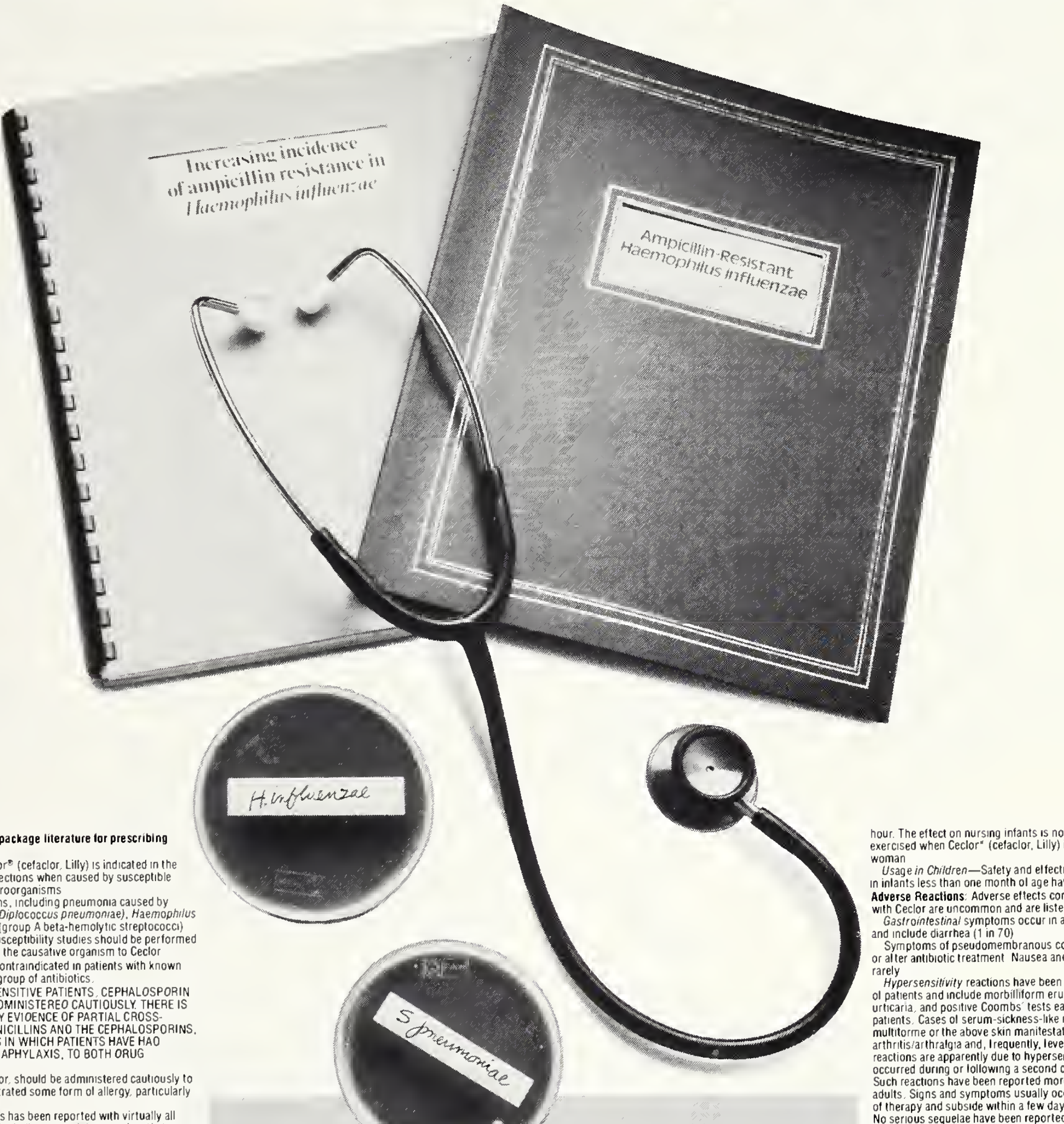
An added complication... in the treatment of bacterial bronchitis*


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

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Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile* Other causes of colitis should be ruled out.

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below:

Gastrointestinal symptoms occur in about 2 5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

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*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.[8]

Note Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information

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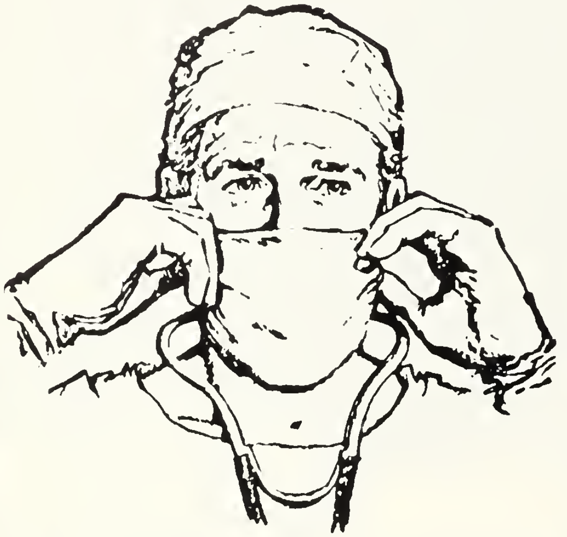

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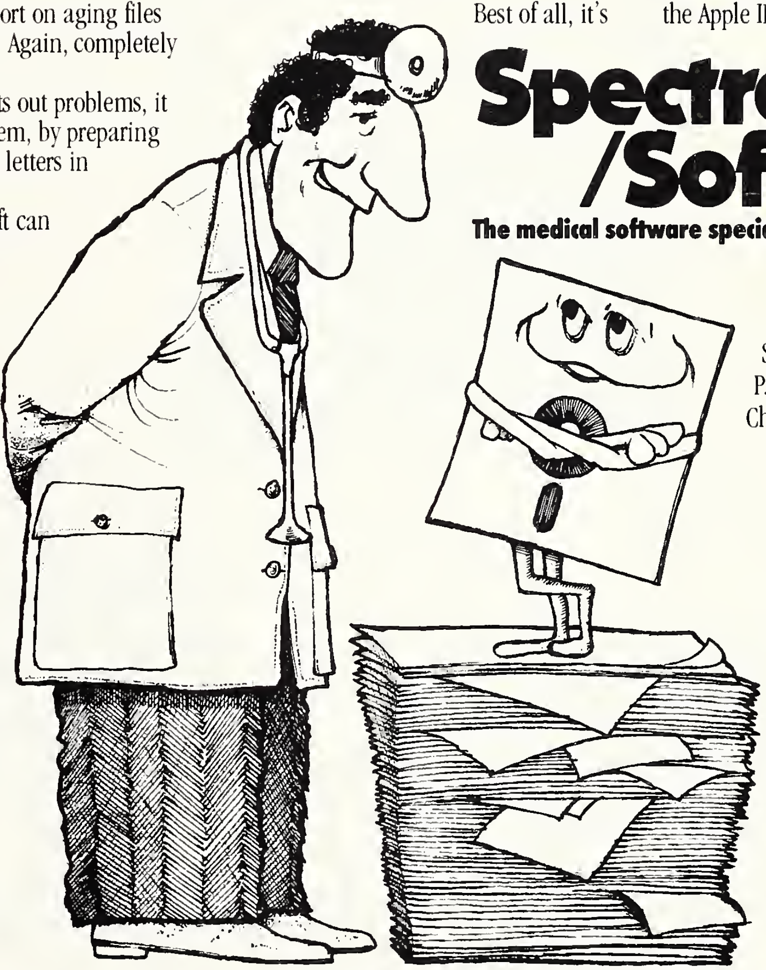

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Cardiology

Hypertrophic Cardiomyopathy

J. Singh Sraow, M.D.
Kenneth B. Desser, M.D.
Alberto Benchimol, M.D.

Editor:
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Hypertrophic cardiomyopathy has been a subject of great interest in the medical community since its initial description by Teare in 1958.[1] The purpose of this paper is to review literature on the subject and allow a better understanding of this entity.

A number of different terms have been used by various investigators to describe this disease and they include hypertrophic obstructive cardiomyopathy,[2] idiopathic hypertrophic subaortic stenosis and muscular subaortic stenosis. Hypertrophic cardiomyopathy (HCM) is a more acceptable term since the disorder may or may not present as an obstructive variety. Asymmetric septal hypertrophy (ASH) has been considered the main feature of this disease and although not pathognomonic, together with systolic anterior motion (SAM) and myocardial cellular disarray, it has been noted to be quite specific for the diagnosis of HCM.

Pathogenesis

HCM is transmitted genetically as an autosomal dominant with a high degree of penetrance. There is increased incidence of HCM in the first degree relatives of a patient affected with this disease. According to the "catecholamine hypothesis," an abnormal response is manifested by the early developing fetal heart from excessive circulating sympathetic amines. This effect is thought to be mediated through a developmental abnormality of the neural crest. The catecholamines produce increased adrenergic stimulation of the myocardium, lead to abnormal cellular disarray and disproportionate septal thickness.[3] This hypothesis is further supported by the presence of HCM in association with several anomalies of the neural crest, such as lentiginosis, neurofibromatosis, tuberous sclerosis and pheochromocytoma.[3-6] The disorder has also been described in patients with Friedreich's ataxia and again may be due to increased sensitivity to adrenergic stimulation.[7] A transient form of HCM is also recognized in infants of diabetic mothers and is thought to be due to excessive production of catecholamines in response to fetal hypoglycemia caused by hyperinsulinemia.[8]

Pathology

Total heart weight is increased in virtually all patients due to generalized hypertrophy of both the atria and ventricles. Left ventricular hypertrophy is, however, more marked compared with other chambers. There is usually asymmetric septal hypertrophy and the septum is massively thickened compared with the left ventricular free wall. The ratio between the interventricular septum and left ventricular posterior wall is 1.3 or greater. The left ventricular cavity is narrow, nondilated and slit-like. Hypertrophy of the papillary muscles is also observed in some cases. Another interesting feature is fibrous thickening of the anterior mitral leaflet and mural endocardium in the left ventricular outflow tract. This finding is secondary to repeated contact between both structures during systole in patients with outflow obstruction. The extramural coronary arteries are large and patent, but the intramural coronary arteries may be narrowed by thickening of the walls as well as from extrinsic pressure produced by hypertrophied muscu-

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From: The Institute for Cardiovascular Diseases, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona 85006. Supported in part by The E. Nichols Memorial Fund and the Institute for Cardiovascular Diseases, Inc. Reprint requests to Alberto Benchimol, M.D., Good Samaritan Medical Center, P. O. Box 2989, Phoenix, Arizona 85062.

Table 1
Effects of Physiologic and Pharmacologic Maneuvers on the Outflow Obstruction and Murmur in Hypertrophic Cardiomyopathy

Maneuver	Mechanism			Effect	
	Pre-load	After-load	Contractility	Outflow obstruction	Murmur
hysiological					
Valsalva	↓	↓	—	↑	↑
Upright Posture	↓	—	—	↑	↑
Squatting	↑	↑	—	↓	↓
Hand Grip	↑	↑	—	↓	↓
Postextrasystole	↑	↓	↑	↑	↑
Postexercise	↓	↓	↑	↑	↑
harmacologic					
Amyl Nitrite	↓	↓	↑	↑	↑
Nitroglycerin	↓	↓	—	↑	↑
Methoxamine (∝—Adrenergic Agonist)	—	↑	—	↓	↓
Angiotensin	—	↑	↑	↓	↓
Propranolol (B-Adrenergic Blocker)	↑	↓	↓	↓	↓
Isoproterenol (B-Adrenergic Agonist)	↓	↓	↑	↑	↑

lature. The changes noted within intramural coronary arteries are mild and do not result in significant obstruction.

Microscopic Features

The most characteristic histologic feature is myocardial fiber disarray.[1] This interesting abnormality is seen as a bizarre arrangement of myocardial fibers interspersed by connective tissue. This disarray is more commonly seen in the interventricular septum in patients with outflow obstruction and in the left ventricular free wall as well as septum in patients without obstruction. The abnormal cells are wider and shorter with large bizarre nuclei and are arranged in a whorling pattern. The specificity of myocardial fiber disarray has recently been questioned. It is found in the interventricular septum in patients with various congenital heart diseases, such as semilunar valve atresia and tetralogy of Fallot. Fiber disarray has also been observed in acquired heart disease including coronary artery disease and systemic hypertension. Maron and Epstein recently showed that the degree of septal disorganization is more specific than its presence.[9] Extensive septal disorganization was present in 90% of their patients with HCM and in only five percent of patients with other cardiac diseases. These investigators concluded that septal disorganization is not pathognomonic of HCM yet it is a very sensitive and specific histologic marker for this disease.[10]

Clinical Findings

The true incidence of symptoms in association with HCM is not known. Some patients are totally asymptomatic and the disease may be detected only by the presence of a typical murmur during routine physicial examination and echocardiographic evaluation of young adults in the immediate family of a patient. The average age at the onset of symptoms has been noted to be 23 years with a majority of patients presenting in their second to fourth decade of life.

The most common symptoms are effort dyspnea, paroxysmal nocturnal dyspnea, angina pectoris, dizziness, syncope and palpitations. Effort dyspnea and paroxymal nocturnal dyspnea are due to pulmonary congestion caused by elevated left atrial pressure and diminished left ventricular compliance. The dyspnea usually occurs after the age of 30 and progresses slowly.

Dizziness (pre-syncope) and syncope are common, occurring in one-third of the patients. They usually occur on assuming the erect posture or immediately after exercise, but may occur without warning. The exact mechanism is poorly understood and it is hypothesized that reflex vasodilation causing hypotension or cardiac arrhythmia may be the causative factor.

Angina pectoris may occur spontaneously at rest or be stress related; sublingual nitroglycerin usually fails to relieve it, and may even make it worse. The precise etiology for this chest pain is not known but diminished myocardial oxygen supply due to coronary compression, increased muscle mass and myocardial tension have been advanced as causative factors.

Physical Signs

Examination of the neck veins reveal a prominent "A" wave. A presystolic apical impulse is palpable in the majority of patients and is ascribed to forcible atrial contraction against a poorly compliant left ventricle. In patients with severe outflow obstruction, a late systolic impulse may be palpated. The carotid pulses are usually sharp with a rapid upstroke and they may be bifid. A systolic thrill is frequently palpable in patients with outflow obstruction. A fourth heart sound is present in almost all patients with HCM who are in sinus rhythm. A third heart sound is also heard in about half of the patients. The second heart sound is physiologically split in the majority of patients and reversal of these components signifies severe outflow obstruction.

A systolic ejection murmur is heard along the left sternal border in a majority of patients with outflow obstruction. In contrast to findings of aortic valvular stenosis, the murmur of HCM does not radiate to the carotid arteries. A holosystolic murmur is usually heard at the apex and is based on associated mitral regurgitation. Any pharmacologic or physical intervention resulting in increased afterload will decrease the apical murmur associated with HCM and therefore help to distinguish it from mitral regurgitation due to other causes. Angiotensin and methoxamine will diminish intensity of the HCM murmur by increasing blood pressure and decreasing the outflow obstruction. The intensity of the murmur reflects the degree of obstruction. Pharmacologic reduction of afterload will increase the intensity of the parasternal murmur. Table 1 summarizes most of the described changes.

Laboratory Diagnosis

Electrocardiographic (ECG) Abnormalities: The majority of patients with HCM, obstructive or nonobstructive, have abnormal ECGs.[11] Maron et al. found various ECG abnormalities in 85% of their patients, the most common being repolarization changes (74%) and left ventricular hypertrophy (48%).[12] There is a wide spectrum of ECG changes in HCM but none are specific for this disease. As many as 50% of the patients have large abnormal Q waves due to disordered septal depolarization. The other ECG abnormalities noted are right or left atrial enlargement, short P-R interval, long P-R interval, left axis deviation due to left anterior hemiblock and complete left or right bundle branch blocks. The presence of a normal ECG does not rule out the possibility of HCM.

Holter Monitoring

The association of sudden death and HCM has been well documented.[13,14] Although the mechanisms of sudden death in this setting have not been clarified, most authorities propose that cardiac arrhythmias and especially those of ventricular origin, may result in low cardiac output followed by syncope and sudden death. Twenty-four hour ECG monitoring has been successful as a method for detecting many of these cardiac arrhythmias.[15] Savage et al. recently demonstrated that 46% of HCM patients manifest multifocal ventricular extra-systoles or ventricular couplets; ventricular tachycardia was recorded in 19% of their patients.[16] An association between Wolff-Parkinson-White syndrome complicated by supraventricular tachyarrhythmias and HCM has been well established.

Radiographic Abnormalities

The chest roentgenogram with its postero-anterior and lateral projections may be normal or show overall enlargement of the cardiac silhouette. Left ventricular hypertrophy may be missed on examination of a plain film because of a reduced or normal sized left ventricular cavity in the majority of patients. Occasionally, left atrial enlargement with prominent pulmonary vascular markings is seen; frank pulmonary edema is rare.

Echocardiographic features

M-mode echocardiography has been used for over a decade in the diagnosis of HCM and is one of the most important noninvasive technics for the diagnosis of this disease. ASH, seen in the majority of patients, is evinced by a septal to left ventricular free wall ration of 1.3 or greater. Maron and Epstein have shown that ASH occurs in ten percent of older children and adults with other congenital or acquired heart diseases, reflecting specificity of 90%.[9] In addition to the occasional association of ASH with congenital and acquired heart disease, it has been noted in patients with aortic valve prostheses about five years after surgery. A reversible form of ASH has been noted in patients with hypothyroidism.[17] In addition to ASH, diminished septal motion is also noted in HCM.

Another important finding seen on echocardiography is systolic anterior motion (SAM) of the anterior mitral leaflet. This unusual motion invariably occurs in patients with left ventricular outflow obstruction and has been noted to disappear after successful surgery resulting in abolition of the outflow gradient. SAM has been noted in patients with no resting gradient but with provokable obstruction due to extra-systoles.[18] Constant apposition of the anterior mitral valve leaflet with the upper interventricular septum plays a role in left ventricular outflow obstruction. It has been recently demonstrated that the duration of SAM, which reflects the period of contact between these structures, correlates well with the degree of obstruction. A specificity of 97% for SAM has been reported by Maron et al.[19] SAM may also be seen in aortic or mitral valve disease, coronary artery disease, d-transposition of the great vessels, discrete subaortic stenosis, Friedreich's ataxia and hypertension.

Patients with resting or provokable outflow obstruction have early systolic closure of the aortic valve which appears as a notch on the anterior aortic leaflet echogram.[20]

Other findings on echocardiography are left atrial enlargement, diminished left ventricular cavity size and mitral anular calcification.

Two Dimensional Echocardiography: Two dimensional echocardiography is useful in patients with segmental thickening of the interventricular septum which can be missed on M-mode echocardiography.[21] Sector scanning is also useful to evaluate SAM of the anterior mitral leaflet. The mitral valve is seen pushed anteriorly and brings the papillary muscle in apposition to the interventricular septum.

Cardiac Catheterization and Angiography: The most haracteristic finding disclosed by cardiac catheterization is demonstration of a subvalvular left ventricular gradient. Special care should be taken because a purious pressure gradient can be recorded if the atheter is entrapped at the cardiac apex. Postectopic beat decrease in arterial pressure (Brockenbrough phenomenon) is characteristic of obstructive HCM in ontrast to a postextrasystolic increase in pressure found n normals or those with fixed aortic obstruction. The alsalva maneuver, amyl nitrite inhalation, sublingual itroglycerin administration or isoproterenol infusion during catheterization increases the outflow gradient nd are invoked to confirm the diagnosis of obstructive HCM. Pharmacologic intervention by means of beta-drenergic blockers (propranolol), calcium channel blockers (verapamil) and alpha-adrenergic agonists phenylephrine) results in a decrease of the subvalvular gradient.

Selective left ventriculography demonstrates a characteristic sausage or slit-shaped cavity of the left ventricle with distortion owing to the hypertrophied papillary muscles.

Natural History

Knowledge about the natural course of the disease is still limited because of the relatively small time period which has transpired since its discovery. In earlier studies younger patients were thought to be more stable and less symptomatic than the older patients with severe symptoms who deteriorated rapidly. Recent data indicates that older patients are more symptomatic but younger patients are prone to sudden and unanticipated demise. The worst prognosis is observed in young patients with a family history of syncope, sudden death or HCM. These factors in addition to severe dyspnea at the last follow-up were considered best predictors of sudden death by McKenna et al.[22] Alarmingly, any particular symptom or the degree of left ventricular outflow tract obstruction fails to correlate with the ncidence of sudden death.

Treatment

Medical Treatment: Nitrates, diuretics and digitalis should be avoided or used with caution. Digoxin may be helpful in controlling supraventricular tachyarrhythmias unresponsive to beta-blockade or in the treatment of heart failure when the left ventricular cavity is dilated. Patients with HCM may deteriorate rapidly if they develop atrial or ventricular tachyarrhythmias. These rhythm disorders should be treated immediately with intravenous propranolol, verapamil or digoxin if the subject is hemodynamically stable or D.C. cardioversion if unstable. The incidence of subacute bacterial endocarditis has been reported to be from 5% to 50% in different series, thereby mandating adequate antibiotic prophylaxis before any dental or surgical procedure. Patients with HCM should also be advised to refrain from strenuous physical exertion.

Beta-adrenergic blocking drugs, mainly propanolol, have been popular as a treatment of HCM.[23,24] Although their exact mechanism of action is not completely understood, beta-blockers have been known to improve cardiac symptoms even though they may fail to decrease the resting subvalvular gradients.[25] The beneficial effects of propranolol are thought to be related to negative inotropic (decreased contractility) and negative chronotropic (bradycardia) properties.

In recent years attention has been given to calcium channel blocking agents, and especially verapamil for the treatment of HCM. After treatment with oral verapamil, there has been subjective as well as objective improvement in patients with HCM. A decrease in chest pain, syncope and dyspnea along with diminished QRS amplitude on the ECG, reduced cardiac size on chest roentgenogram, and smaller left ventricular muscle mass measured at follow-up cardiac catheterization[26,27] attest to the efficacy of this agent. This optimism should be tempered by reports suggesting that hypotension, suppression of sinus node activity and significant inhibition of A-V nodal conduction can occur with use of such agents[28]

Surgical Treatment

Left ventricular myotomy in combination with myectomy is the preferred surgical procedure. Surgery has been reported to either diminish or totally abolish the subvalvular gradient documented by cardiac cathererization or result in disappearance of SAM on echocardiography postoperatively. The patient's symptomatic status is dramatically improved, yet surgery does not reduce the incidence of sudden death. Situations indicating the need for operative intervention include: 1) severe symptoms unresponsive to appropriate medical therapy; 2) marked left ventricular outflow obstruction i.e. subvalvular gradient of 50 mmHg or more, and possibly: 3) a history of prior cardiac arrest.[29] Replacement of the mitral valve should be reserved for patients with severe mitral regurgitation.

Acknowledgements

We wish to acknowledge the technical assistance of Carole Crevier and Jennie Goff.

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Endocrinology

Mineralocorticoid Deficiency Associated with Aminoglutethimide Therapy

Charles A. Katzenberg, M.D.
Frederick R. Ahmann, M.D.
Hugh H. Gallagher, M.D.
Gordon A. Ewy, M.D.

Medical "adrenalectomy," utilizing a regimen of aminoglutethimide and replacement hydrocortisone can be an effective adjunct to the treatment of metastatic breast carcinoma.[1] Reported side effects have included lethargy, dizziness, ataxia, skin rash, hypothyroidism and blood dyscrasias. Adrenal insufficiency has not been reported.

The patient described herein developed acute mineralocorticoid deficiency three weeks after beginning therapy with aminoglutethimide and replacement hydrocortisone.

From: University of Arizona College of Medicine, Tucson, Arizona 85724.

Case

A 51-year-old postmenopausal female with Stage IV breast carinoma, was brought to the emergency room complaining of a near syncopal episode following 48 hours of malaise and weakness. Eight years previously the patient was premenopausal and underwent a modified radical mastectomy for a $T_2N_0M_0$ scirrhous adenocarcinoma of the breast.

Metastatic disease was first discovered five years later when an exploratory laparotomy documented liver and bone metastases. An oophorectomy was performed and estrogen receptor protein analysis of the liver metastases revealed a level of 51 femtomoles/mg of tumor. The oophorectomy resulted in a one year remission. However, in August 1977 she developed new bone metastases and was placed on combination chemotherapy. The patient had an excellent remission lasting three years. In September 1980 the patient's bone metastases was noted to progress and her therapy was changed to Tamoxifen. There was no response to this hormonal manipulation and the patient was referred to the University of Arizona Cancer Center. Therapy with aminoglutethimide 250 mg orally q.i.d. and hydrocortisone 50 mg orally q.d. was initiated. Other chronic medications included synthroid 0.1 mg/day, methadone 50 mg/day, hydrochlorothiazide 25 mg b.i.d., triamterene 50 mg b.i.d., lithium carbonate 200 mg/day, and amitryptiline 100 mg at bedtime.

In the emergency department the patient was lethargic, but responsive. She was pale, cool, and diaphoretic. Her systolic blood pressure was 80 mm Hg, respirations 24/min, and her heart rate varied between 130 and 170 beats/min. Her temperature was 36.4° C. The remainder of the exam was unremarkable. The admission electrocardiogram (Figure 1), showed regular tachycardia with a wide QRS complex.

Because of possible amitryptiline overdose, she was given an ampule of bicarbonate. In addition, she received 50 percent glucose, lidocaine and naloxone hydrochloride. Within minutes the QRS complex changed to a wider, more bizarre pattern without a change in rate. As preparation was made for emergency cardioversion, the rhythm spontaneously converted to normal sinus rhythm at a rate of 90 beats per minute. Peaked T waves were noted on this electrocardiogram (Figure 2). Initial laboratory data revealed serum sodium 119 mEq/L, potassium 7.0 mEq/L, chloride 93 mEq/L, bicarbonate 17 mEq/L, creatinine 1.7 mg/dl, BUN 22 mg/dl, and glucose 239 mg/dl. Her serum cortisol was 30 pg/ml (normal 5-20), and serum ACTH 24 pg/ml (normal 10-50).

Further acute therapy consisted of glucose, insulin, bicarbonate, and hydrocortisone. There was no evidence of myocardial infarction. Following resolution of the acute episode, aminoglutethimide and hydrocortisone therapy was restarted with the addition of fludrocortisone acetate (Florinef®). Hydrochlorthiazide was continued and triamterene and lithium were discontinued. Her electrolytes remained normal, and there was no further dysrhythmias.

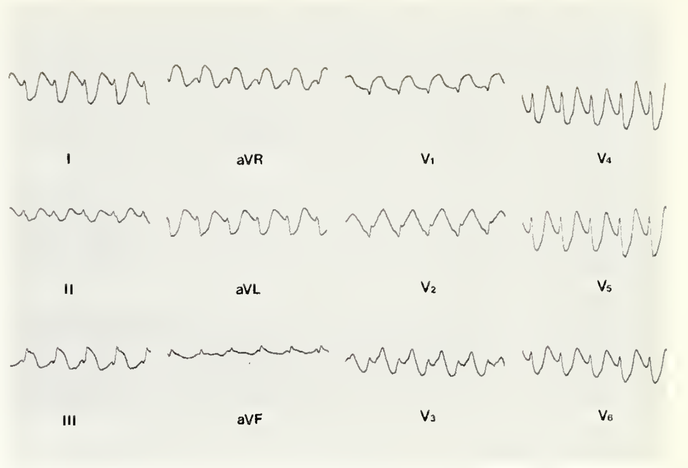

Figure 1
Standard 12 lead electrocardiogram showing a wide QRS tachycardia at a rate of 170 beats per minute.

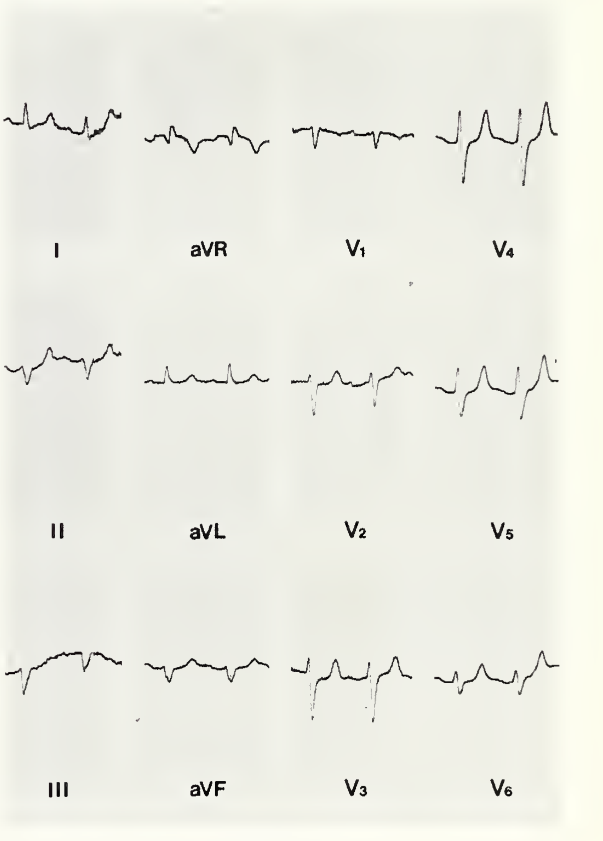

Figure 2
Standard 12 lead electrocardiogram showing sinus tachycardia of 115 beats per minute. Left axis deviation and peaked T waves are present.

This patient underwent an aminoglutethimide-induced "medical adrenalectomy" with apparently inadequate mineralocorticoid replacement, resulting in hyperkalemia, hyponatremia, tachydysrhythmias and hypotension. The inclusion of triamterene in the medical regimen may have contributed to the development of hyperkalemia. Hydrochlorothiazide and lithium are associated with hyponatremia.

Aminoglutethimide was originally introduced as an anticonvulsant, but was withdrawn due to its inhibition of hormone secretion.[2] The mechanism of action of this drug is to block the conversion of cholesterol to pregnenolone thereby interrupting the synthesis of glucocorticoids, mineralocorticoids, and adrenal androgens. With aminoglutethimide the peripheral aromatization of androgens to estrogens is also blocked, causing plasma estrone and estradiol levels to fall. This suppression of estrogen production has been the rationale behind the use of aminoglutethimide in the treatment of breast carcinoma.[2]

In order to prevent adrenal insufficiency during aminoglutethimide therapy, glucocorticoid replacement, in the form of hydrocortisone, is given. In the study of Santen et al.[1], adrenal insufficiency did not occur during the administration of the aminoglutethimide and hydrocortisone regimen. Mineralcorticoids were to be added if orthostatic hypotension or hyponatremia developed, but they did not report electrolyte disturbances or the number of patients requiring mineralocorticoid replacement. Previous work[6] has suggested that monitoring plasma potassium and renin levels in patients receiving glucocorticoid replacement for Addison's Disease could insure adequate mineralocorticoid replacement.

In summary, we report a case of acute mineralocorticoid deficiency in a patient receiving aminoglutethimide and hydrocortisone. This life threatening mineralocorticoid deficiency developed within three weeks of initiating therapy. The rapidity of the development of this condition has led to the adoption of a policy of placing all patients receiving aminoglutethimide on a mineralocorticoid replacement regimen. At the very least electrolytes should be monitored frequently, especially early into the course of aminoglutethimide therapy and particularly if there are other chronic medications present which could aggravate potential electrolyte imbalances.

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Medical Genetics

First-Trimester Prenatal Diagnosis by Trophoblast Biopsy

Frederick Hecht, M.D.
Barbara K. Hecht, Ph.D.
Helen Bixenman, B.S. CLS(CG)
Melanie Manning, M.S., CLS(CG)
Carolyn Van Ness, B.A.

Editor:
Frederick Hecht, M.D.

Abstract

Prenatal genetic diagnosis has traditionally been done in the mid-trimester of pregnancy. An obscure technique developed in China has been modified to permit transcervical trophoblast biopsy in first trimester. With this technique, chorionic villi are biopsied. This allows chromosome and DNA analysis and so permits the diagnosis of normal features such as sex and abnormalities such as sickle cell anemia and thalassemia as early as seven weeks' gestation. This is a revolutionay advance in antenatal diagnosis, since it moves precise knowledge into early pregnancy.

In the 1960s prenatal genetic diagnosis came into existence. With the culture of mid-trimester amniotic fluid cells and chromosome analysis, the antenatal diagnosis of trisomy 21 (Down Syndrome) became available to pregnant women of advanced maternal age. Advances in prenatal diagnosis have also involved ultrasound. With ultrasound, a number of additional fetal defects could be detected. Assays of amniotic fluid alpha-fetoprotein (AFP) allowed the detection of open neural tube defects, omphalocele and gastroschisis.

From: The Genetics Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281. Reprint requests to Frederick Hecht, M.D. The Genetics Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281.

Maternal serum AFP tests facilitated the detection of high-risk pregnancies. However, these procedures were ll usually done in mid-trimester, at about 15 to 20 weeks gestation.

A new advance is significant in that it moves prenatal genetic diagnosis up considerably earlier in pregnancy: nto the first trimester. Curiously enough, a Chinese liscovery[1] in 1975 is the basis for this progress. It has been recognized, simplified and coupled with ontemporary techniques for DNA analysis.[2]

The Techniques of Trophoblast Biopsy

A biopsy instrument has been developed in the United Kingdom,[3] by Portex Ltd., Kent, England, conisting of a 16 cm long catheter which is 1.5 mm in liameter. The catheter has an aluminum obturator isible by ultrasound. It also has a small sliding stop.

By ultrasound, the chorion frondosum is defined. The catheter and obturator are then shaped to comply with he anatomy of the area. The sliding stop is positioned to prevent the catheter from going too far. The catheter is ntroduced transcervically and guided to the appropriate area under real-time ultrasound.

The obturator within the catheter is then withdrawn. A syringe is attached to the catheter (20 ml syringe ecommended) and 10 ml of suction is applied. The catheter is withdrawn. Trophoblastic tissue (chorionic illi) is now within the catheter and can be washed out or analysis.

Other techniques of trophoblast biopsy are available ncluding blind needle aspiration (which the Chinese levised)[1] and direct-vision chorionic biopsy through an endoscope.[4] Blind needle aspiration[1] is least successful. More potential problems can be foreseen from the ntroduction of an endoscope (2.2 mm diameter) than a atheter (1.5 mm diameter), since generally the risk of miscarriage is directly proportional to the diameter of he instrument. At this time, the catheter[3] appears to offer maximum safety for trophoblast biopsy.

First-Trimester Diagnosis of Sickle Cell Anemia

Every baby born in Arizona is screened for sickle hemoglobin (Hb S). This test is done with blood from the ilter paper spots together with tests for hypothyroidism, PKU and other genetic metabolic disorders. Unfortunately, at the time of birth it is too late to prevent sickle cell anemia and postnatal treatment is by no means curative.

The diagnosis of sickle cell anemia can now be made early in pregnancy with DNA. Two methods of analysis are available using DNA (Table 1)

One method involves linkage analysis (Table 1A). The ickle cell gene tends to be linked to an unusually large ragment of DNA when DNA is cleaved[5] with the restriction enzyme Hpa I. Instead of a DNA fragment containing 7.6 Kb (7.6 thousand bases), the DNA ragment has 13 Kb (13 thousand bases). This difference can be easily detected whenever present.

Another method for the prenatal detection of sickle cell anemia is direct analysis (Table 1B). Since the sickle mutation involves a specific restriction enzyme site, use of a specific restriction enzyme permits the detection of sickle cell anemia in all cases.[6,7] The necessary DNA can be obtained by trophoblast biopsy.

Table 1
Prenatal Diagnosis of Sickle Cell Anemia By DNA Analysis

A. Linkage Analysis
1. Sickle cell anemia is due to a point mutation in the beta globin gene on chromosome 11.
2. The DNA of chromosome 11 is cut into pieces by restriction enzymes.
3. One piece of DNA contains the beta globin gene.
4. The sickle gene is often linked to an unusually large piece of DNA.
5. Finding the large piece of DNA provides evidence for the sickle gene.[5]

B. Direct Analysis
1. The sickle mutation is at a specific restriction enzyme site.
2. Use of the specific restriction enzyme provides evidence for the sickle gene.[6]

Illustrative Case

A doctor and his wife had one child with sickle cell anemia.[3] They elected to have first-trimester prenatal diagnosis in the next pregnancy. This was done at eight weeks' gestation. Trophoblast biopsy provided DNA for analysis. The parents had one copy each of the sickle gene linked to a 13 Kb fragment. The trophoblast DNA analysis generated a 13 Kb fragment and a 7.6 Kb fragment (linked to the gene for normal beta globin). The fetus clearly was a carrier for sickle cell trait, but did not have sickle cell anemia. As expected, a normal child was born.

Comment

The same method of analysis can be done with amniocytes obtained in mid-trimester by amniocentesis.[5-7]

First-Trimester Diagnosis of Thalassemia

Beta thalassemia (Mediterranean anemia) is common in people from Italy, Greece and many other parts of the world. Beta thalassemia involves defective production of beta globin. It is a relentlessly progressive, fatal illness. Parents are carriers. The risk for each of their children to be affected with beta thalassemia is twenty-five percent.

Prenatal diagnosis of beta thalassemia is possible in many cases by linkage analysis of DNA and in all cases by direct analysis when the disease is due to deletion of part or all of the beta globin gene (like direct analysis for sickle cell anemia in Table 1B).

Illustrative Cases

Case 1 (Linkage analysis): A couple had had three pregnancies: one resulted in a normal child; one gave rise to a child with beta thalassemia; and one was a pregnancy with beta thalassemia which the couple chose to terminate.[3] In the fourth pregnancy the family elected to have first-trimester diagnosis. DNA analysis of trophoblast tissue disclosed only a large 14 Kb fragment through previous family studies to be linked to the beta thalassemia gene. This analysis indicating that the pregnancy had beta thalassemia was done at 11 weeks gestation. The pregnancy was terminated and beta thalassemia was confirmed with complete absence of beta globin synthesis.

Case 2 (Direct analysis): A couple had one child with beta thalassemia due to partial deletion of the beta globin gene. Trophoblast biopsy in the seventh week of the next pregnancy provided DNA which on analysis revealed one normal and one small fragment indicating that the pregnancy involved merely the carrier state, but not the disease. A normal child was anticipated and was born.

Comments: Parents carrying a gene for beta thalassemia have a 25% risk of having an affected child (as in Case 1), a 50% chance for a child with the carrier state (as in Case 2) and a 25% chance for a child with entirely normal hemoglobin production.

Early diagnosis has several possible advantages. Trophoblast biopsy is painless. Privacy is increased by the early timing. Cell culture is not necessary. Diagnosis is rapid.

First-Trimester Y-Chromosome DNA Detection

The Y chromosome has unique DNA sequences that can be identified by molecular hybridization. With first-trimester trophoblast biopsies, the Y-chromosome specific DNA sequences can be identified, as was recently shown in a series of 13 cases.[4]

Comments: This technique is the most accurate one for the early diagnosis of the Y chromosome and so of fetal sex. The method has applications to the prenatal diagnosis of pregnancies at risk for fatal X-linked recessive disorders, e.g., Duchenne muscular dystrophy. The method is, however, potentially susceptible to abuse in sex selection for nonmedical reasons.

Discussion and Conclusion

The advance of prenatal diagnosis is clearly toward an earlier time in pregnancy: first trimester. Mid-trimester is still the safest known time for prenatal genetic diagnosis (by amniocentesis) as indicated in Table 2, but first-trimester diagnosis provides several salient advantages: 1) earlier information and, usually, therefore, 2) rapid reassurance of the family.

The technology of trophoblast biopsy has been utilized, as illustrated here, for the diagnosis of sickle cell anemia and beta thalassemia[3] and the Y chromosome.[4] Its future potential is great for other aspects bearing on pregnancy. For example, chromosome studies can be done with the trophoblastic tissue to determine the keryotype.

The current technology for first-trimester trophoblast biopsy was developed in Great Britain (the United Kingdom).[3,4] The general approach was initially pioneered in China[1] in 1975. It is our hope that this advance will be applied in the near future in the United States with care, expertise and restraint as an additional aid to prenatal diagnosis.

Table 2
Prenatal Diagnosis by Trophoblast Biopsy Compared to Amniocentesis

Feature	Trophoblast Biopsy	Amniocentesis
Time	First-trimester	Mid-trimester
Safety	Uncertain	Proven
Detection	Hemoglobin disorders Chromosome analysis*	Hemoglobin disorders Chromosome analysis Metabolic disorders*
Utilization	Experimental	Routine
Advantage	Earlier timing	Safety

*Other disorders may be detected in the future.

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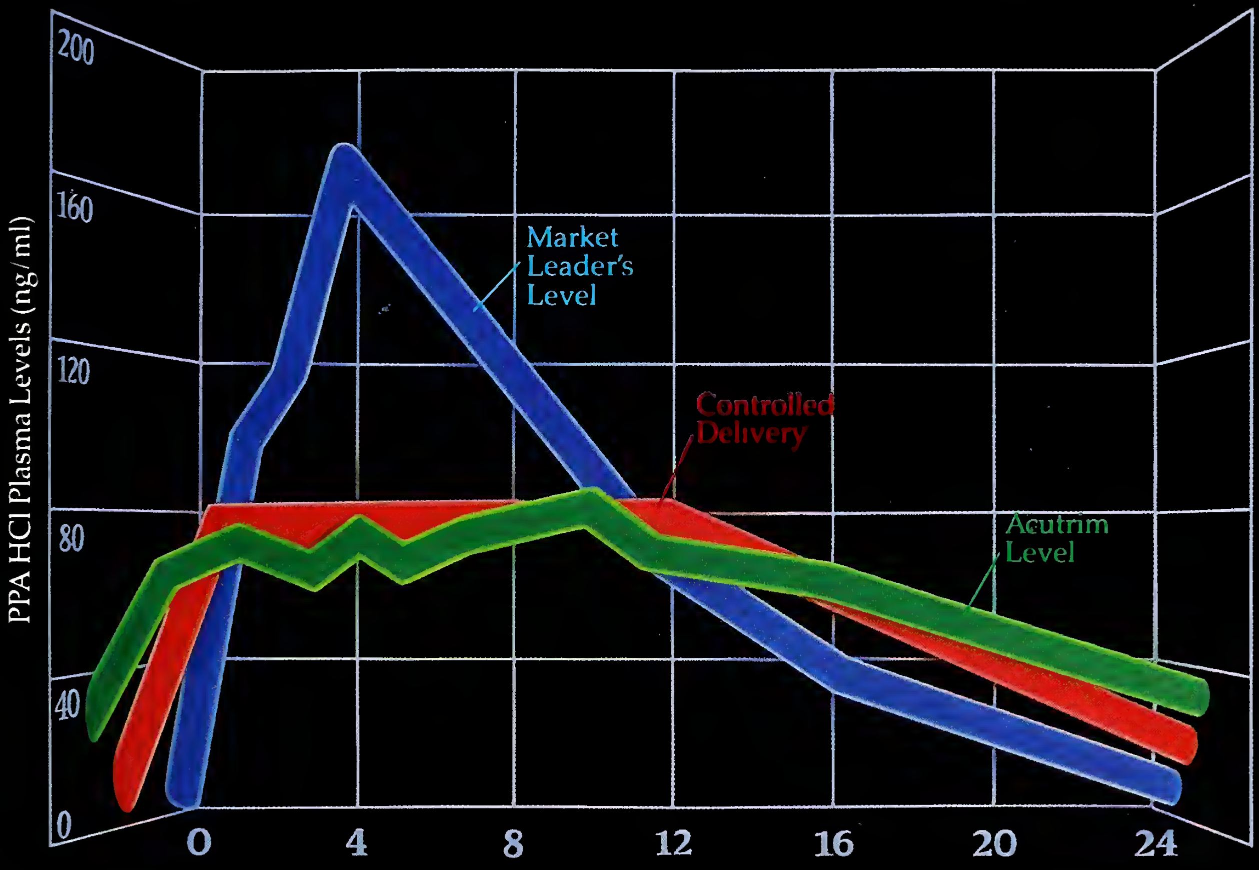

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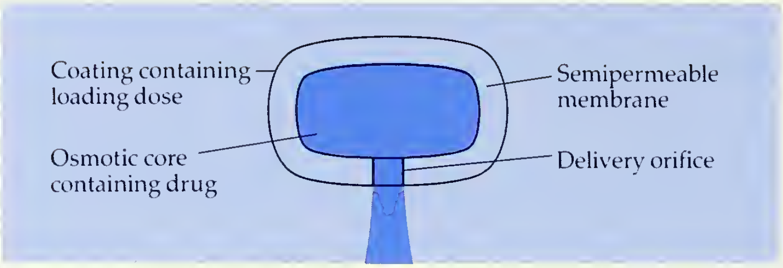

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Neurology

Nervous System Complications of Hemophilia

Howard K. Sakima, M.D.
Allen M. Kaplan, M.D.
Paul V. Baranko, M.D.
Terry S. Wood, M.D.
Jesse D. Cohen, M.D.

Editors:
James L. Frey, M.D.
J. Michael Powers, M.D.
Lawrence Z. Stern, M.D.

Neurologic complications of hemophilia are well documented and include involvement of the central and peripheral nervous systems as well as muscle. Intracranial or intraspinal hemorrhages are the most serious of these complications and a major cause of morbidity and mortality in hemophilia. Early recognition of these complications and adequate factor replacement are essential to prevention of permanent neurologic sequelae. We report four cases of intracranial hemorrhage and one case of intraspinal hemorrhage occurring in hemophiliac patients and review the neurologic complications, diagnosis, and management of these disorders.

Case Reports

Case 1: A 15-year-old white male with hemophilia A was admitted to the hospital with history of fever, headache, and weakness of his right arm and leg. The patient had been relatively well until one week prior to admission when he complained of constipation and later developed severe frontal headaches associated with emesis while playing tennis. Symptoms and signs improved until one day prior to admission when progressive headache and weakness prompted admission to the hospital.

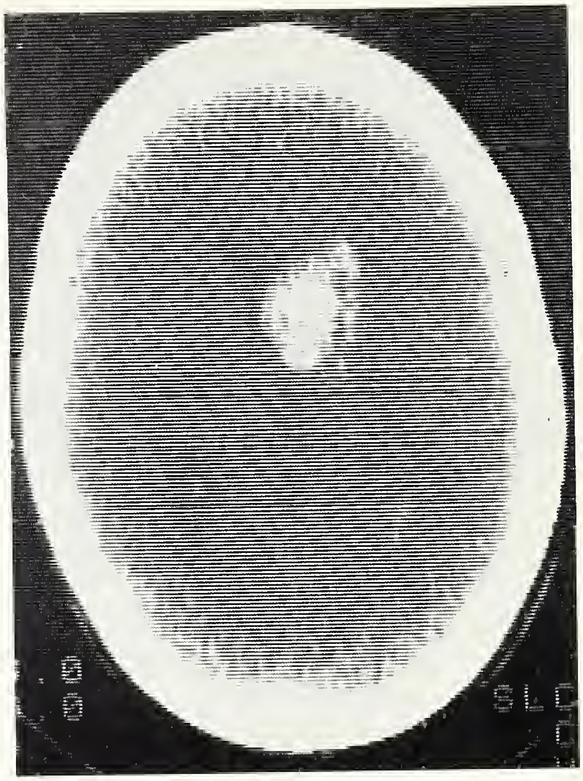

Figure 1
Computerized tomographic scan showing hemorrhage within the right frontal horn of the lateral ventricle.

Physical examination on admission revealed a well-developed male in no acute distress. Vital signs were normal. Blood pressure 106/70, pulse 82. Nuchal rigidity was elicited. The cardiopulmonary and abdominal examinations were normal. The neurological examination revealed an alert, cooperative patient with slight dysarthria of speech. The sensory examination revealed right-sided facial hypesthesia and some dysgraphia. Motor testing was normal except for a right-sided pronator drift. Cerebellar functions were intact. The deep tendon responses were symmetrical, and Babinski signs were not present.

Laboratory results on admission revealed a normal CBC and serum electrolytes. A prothrombin time (PT) was 16 seconds (control, 12.5 seconds), and a partial thromboplastin time (PTT) was 35 (normal, 20 to 30). A Factor VIII assay showed 15% activity. A computerized tomographic scan (CT) of the cranium revealed an intraventricular hemorrhage confined to the right lateral ventricle (Figure 1).

On admission the patient was transfused with 2500 units of Factor VIII to raise his serum level to 100%. Anticonvulsant therapy was also started for seizure prophylaxis. The patient received Factor VIII replacement therapy to maintain a level of 30% to 50% of normal activity for 14 days. Coagulation studies were maintained within normal limits while receiving replacement therapy. Neurologic symptoms and signs gradually resolved. A repeat CT scan was obtained on

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From: Department of Pediatric Education, Phoenix Children's Hospital, a Division of Good Samaritan Medical Center, Phoenix, Arizona 85006. Reprint requests to: Allen M. Kaplan, M.D., Department of Pediatric Education, Phoenix Children's Hospital, 1117 East Willetta Street, Phoenix, Arizona 85006.

the sixth hospital day and showed resolving intraventricular hemorrhage without hydrocephalus. Neurologic follow-up several months later revealed no neurologic sequelae.

Case 2: An 18-year-old white male with hemophilia B was well until one week prior to admission when he developed headache following diving into a swimming pool. Two days prior to admission he developed numbness of his entire arm. On the day of admission he experienced two episodes of emesis and noted slurring of his speech. The patient also noted mild swelling of his tongue and bruises on the left side of his face which were not present the previous night, suggesting a probable nocturnal seizure.

The past medical history was significant for a previous hospitalization 15 months before the present admission for treatment of a subarachnoid hemorrhage. The etiology of the latter hemorrhage was obscure but felt to be related to increased intracranial pressure from yelling at a school pep rally. Conservative treatment at that time with Factor IX replacement was instituted without complications or neurologic sequelae. The patient was discharged on anticonvulsant therapy, but this was discontinued after eight months.

The general physical examination on admission was normal with the exception of mild flexion contractures of both elbows. The neurologic examination revealed an alert, oriented patient with intact cranial nerves. The patient was dysarthric with right-sided hypesthesia and hypanalgesia. The deep tendon responses were symmetrical bilaterally. A Babinski sign on the right side was present.

Laboratory studies revealed a normal complete blood count. Coagulation studies revealed a PT of 10.1 seconds (control, 9 to 11 seconds) and a slightly prolonged PTT at 45 seconds (normal, 20 to 30 seconds). A Factor IX level was not documented. A CT scan revealed a small left posterior temporoparietal subdural hemorrhage with compression and displacement of the posterior horn of the lateral ventricles (Figure 2).

On admission the patient was started on Factor IX replacement (Konyne, 3000 units). Subsequent to the CT scan, the patient had a generalized seizure and was transferred to the neurosurgical intensive care unit and started on anticonvulsant therapy. Factor IX replacement was given every 12 hours to maintain a level of 70% activity for ten days. The patient improved with decrease in headache and complete resolution of his right-sided neurologic signs and dysarthria. A repeat scan revealed resolution of the extracerebral hematoma. The patient was discharged well from the hospital on anticonvulsant therapy.

Case 3: A 15-year-old white male with hemophilia B was well until five days prior to admission when he developed an upper respiratory infection. One day prior to admission he developed back and right arm pain and was given Factor IX replacement therapy (Konyne, 1000 units) at home. On the day of admission the patient developed headache and dizziness and had a generalized seizure with loss of consciousness for 15 to 20 minutes.

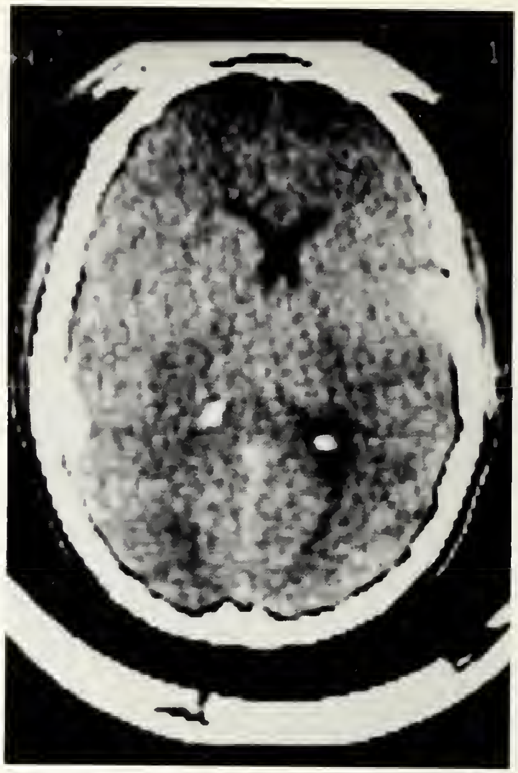

Figure 2
Computerized tomographic scan showing a small left posterior subdural hemorrhage with compression of the posterior horn of the lateral ventricle and displacement of the calcified choroid plexus.

The past medical history was significant for a right-sided subdural hematoma at age six months which required surgical management. The postoperative course was complicated by meningitis, but there were no neurologic residua documented.

General physical examination on admission was essentially normal. Vital signs were stable. The neurologic examination revealed no definite localizing signs save for a subjective left-sided hypesthesia and hypanalgesia. Cranial nerves, including the visual fields and funduscopic examination, were normal. Cerebellar and motor examinations were normal although there was a slight flexion contracture of the elbow secondary to a previous hemarthrosis. The deep tendon responses were bilaterally symmetric, and Babinski signs were not present.

On admission the patient was given Factor IX replacement (Konyne, 3500 units). Anticonvulsant therapy was also started.

Laboratory studies included a normal CBC and coagulation studies. An electroencephalogram revealed seizure discharges emanating from the right parietal and temporal regions. A CT scan (Figure 3) showed a large cyst of the right parietal area.

Although the exact origin of the cyst is speculative, the authors feel it is related to the previously removed hematoma and associated adjacent cortical contusion

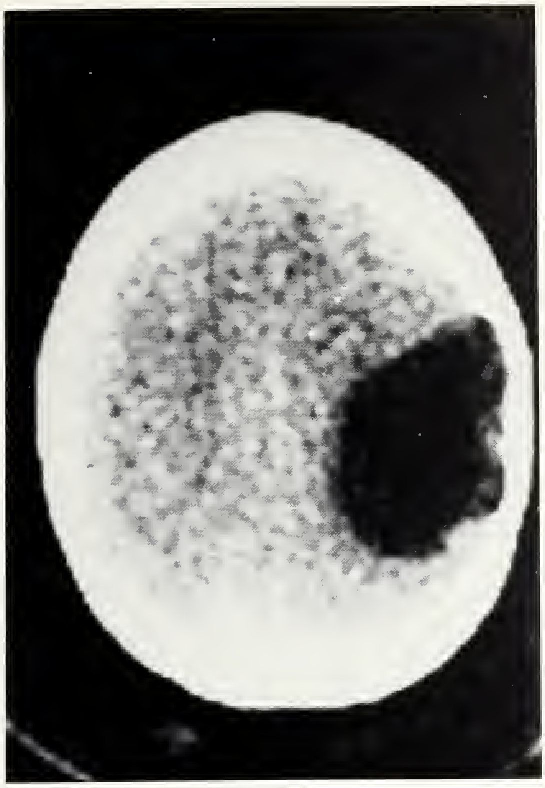

Figure 3
Computerized tomographic scan showing a large parietal cyst.

resulting in cavitary necrosis and CSF replacement.

The hospital course was uncomplicated. The patient received daily replacement therapy during his three-day hospitalization and was discharged on anticonvulsant therapy.

Case 4: A six-month-old infant male presented to the hospital with history of irritability and poor feeding. One day prior to admission the infant was noted to have a weak cry, poor sucking responses, generalized weakness, and neck stiffness.

The physical examination on admission revealed an irritable infant with a left torticollis. The remainder of the general physical examination was essentially normal. The neurologic examination revealed a right-sided Horner's syndrome with intact cranial nerves. The upper extremities were flaccid and areflexic. The infant moved both lower extremities although the deep tendon responses were hyperactive with Babinski signs bilaterally.

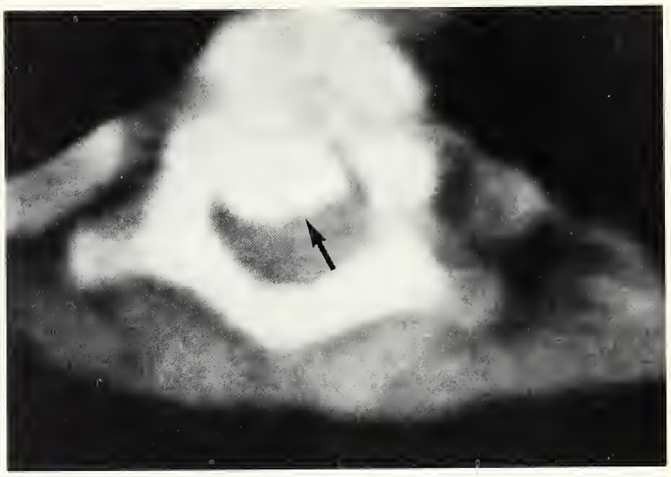

Figure 4
Computerized tomographic scan at the cervical 5-6 level following metrizamide injection. Compression and anterior displacement of the spinal cord (arrow) by epidural hemorrhage is noted.

Laboratory Studies: X-ray examination of the spine revealed a partial fusion of C2-5 and spina bifida of the upper six cervical segments with widening of the interpedicular distances in the lower cervical region. A metrizamide myelogram followed by CT scanning showed a partial block at C5-6 with passage of only small amounts of metrizamide into the cervical regions. Follow-up CT scans showed the thecal sac to be displaced anteriorly by a mass within the neural canal (Figure 4). Cerebrospinal fluid studies at the time of myelography revealed a xanthochromic fluid with 180 RBC's and 8 WBC's (80% lymphocytes). The CSF glucose was 72 mg/dl, and protein was 1530 mg/dl. Cultures were negative.

The patient was taken to the operating room, and a large epidural hematoma was evacuated extending from C4-C7. Pathologic diagnosis at the time was that of a cervial arteriovenous malformation with organized hematoma. Subsequent to surgery, the patient continued to hemorrhage from the epidural drain and required multiple transfusions. Coagulation studies at that time revealed a PT of 12.0 seconds (control, 11-13) and a PTT of 56.0 seconds (normal, 20-30). A Factor VIII level was 1.9% activity. Factor VIII replacement was initiated to maintain a factor level of 60% to 70% for ten days. There was no further bleeding, and the patient's neurologic signs improved. Follow-up neurologic ex-

Table 1
Site and Mortality of ICH

Site of Hemorrhage	Pre 1960	Deaths	1960-1976	Deaths
Subdural/epidural	14	11	47	8
Intracerebral	12	9	43	20
Subarachnoid/ intraventricular	11	2	29	6
Total patients	31*	22 (70%)	109*	34 (31%)

**Total number of hemorrhages exceeds total number of patients because of multiple bleeds per patient.*

amination several months after discharge revealed no definite neurologic residua or neurodevelopmental handicaps.

Case 5: A seven-month-old white male with hemophilia A was admitted to an outlying hospital with a history of recurrent emesis. Shortly after admission, the patient had a sudden respiratory arrest and required intubation and assisted ventilation. The patient received Factor VIII replacement, broad-spectrum antibiotics, anticonvulsants, and medications for increased intracranial pressure.

Neurologic examination on transfer revealed a hypothermic (32°C) and deeply comatose infant with absent brain stem responses. The anterior fontanelle was tense. Deep tendon responses were absent.

Laboratory studies revealed a normal CBC and serum electrolytes and chemistries. A CT scan on admission showed evidence of subarachnoid and posterior fossa hemorrhage with suspected compression of the brain stem (Figure 5). An electroencephalogram was isoelectric.

The patient was pronounced dead 24 hours after admission. General postmortem examination revealed a large ecchymosis of left gastrocnemius muscle and moderate hemorrhage into the anterior mediastinum. Neuropathologic examination revealed extensive subarachroid hemorrhage at the level of the cerebellar tonsils, extending along the inferior surface of the cerebellar hemisphere and brain stem. The cerebral hemispheres were symmetrical with flattening of gyri and congestion of the leptomeninges with foci of subarachnoid hemorrhage. At the base of the brain uncal grooving was noted bilaterally. The cerebellum was compressed and elevated upward. Histologic sections showed hemorrhage extending into the cerebellar hemispheres.

Discussion

The neurologic complications of hemophilia are directly related to the site of hemorrhage within the neuroaxis. Involvement in intracranial structures, spinal cord, peripheral nerves, and muscle have all been reported.[1-7] The severity of the neurologic symptoms and signs are therefore variable and dependent on: 1) localization of the hemorrhage, 2) rapidity of development, and 3) efficiency and effectiveness of replacement therapy.[1] Intracranial hemorrhage (ICH) is now considered the leading cause of death among hemophiliacs. The incidence of ICH ranges from 2.2% to 13.8%.[1] In a recent review of 2500 hemophiliacs, an incidence rate of 2.7% was reported.[2] The most frequent presenting symptoms/signs include headache associated with emesis, seizures, and changes in sensorium. However, any loss of consciousness, ataxia, behavioral changes or weakness require evaluation. Delay of onset symptoms following central nervous system trauma is not uncommon (50%) with a mean duration of 4±2.2 days.[2] This long latent period was most frequent in patients with subdural hematomas. The various sites of hemorrhage and mortality figures for ICH are reviewed in Table 1.[1,2,4] Since the development of specific factor concentrates, there has been a dramatic decrease in mortality.

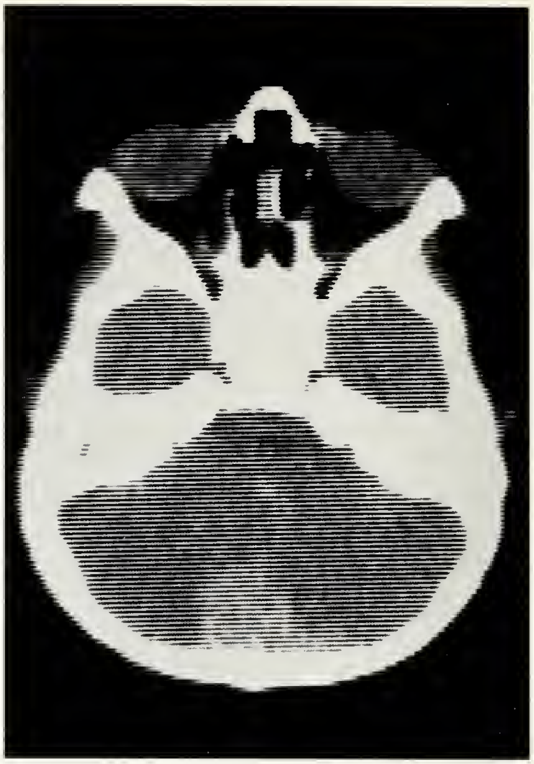

Figure 5
Computerized tomographic scan of the posterior fossa showing subarachnoid hemorrhage with extension into the cerebellar hemispheres.

Neurologic complications subsequent to ICH are frequent. Seizures have been reported in 20% to 25% of patients and increase the risk for recurrent intracranial hemorrhage.[1,4] Review of 47 survivors with ICH showed motor impairments, mental retardation, or seizure disorders following bleeding episodes in 22 (47%) of the patients.2 Other significant neurologic residua include ataxia, paresis, aphasia, and hydrocephalus.[1]

The etiology of ICH is problematic with a history of significant trauma obtained in only 40% to 65% of patients.[2,4,6] Hypertension, underlying cerebral or cerebellar anomalies, acquired cerebrovascular lesions, or tumors have also played a causative role. Cases two and five suggest exertional and/or Valsalva factors may also be significant.

In the past, diagnosis of intracranial hemorrhage had required invasive and at times hazardous investigative measures including lumbar puncture and angiography.[8] Since the advent of computerized tomography, diagnosis of intracranial or spinal hemorrhages is now noninvasive. The CT scan provides rapid information on the presence, location, and extent of intracranial bleeding, as well as providing a rational approach to therapy. If hemorrhage is not present, excessive factor replacement can be avoided. If intracranial hemorrhage, however, has occurred, the CT scan offers a modality to follow the response to therapy or the need for neurosurgical intervention.[9]

Intraspinal hemorrhage occurs much less frequently than intracranial bleeds. Van Trotsenburg[4] reports only 12 cases of intravertebral canal hemorrhage in a review from 1850-1974. The clinical presentation of intraspinal hemorrhage consists of an acute, painful episode with or without a preceding injury or exertion associated with progressive, paralytic, and/or sensory symptoms. Neurologic examination reveals varying degrees of myelopathy dependent on the location of cord involvement. Lumbar puncture and myelography are essential for accurate diagnosis and location of hemorrhage, but this can only safely be performed *after* adequate replacement therapy has been initiated. CT scanning is beneficial in defining the extent and site of hemorrhage.

Recommendations for Therapy

Guidelines to treatment of hemophiliac patients with possible central nervous system complications include the prompt recognition of central nervous system involvement, rapid and repeated factor infusions as necessary, prevention of complications and/or additional injury, and surgical intervention when indicated. Since specific factor replacement is readily available and adequately corrects clotting abnormalities promptly, surgical procedures can be performed with less morbidity and mortality than in the past. CT scanning has improved the accuracy of diagnosis of central nervous system hemorrhage and allows for the avoidance of excessive factor replacement and the inherent risks of transfusion. Any hemophiliac patient presenting with history of head or spine trauma, severe headache or cephalgia lasting longer than 12 hours in duration, or positive and persistent neurologic findings, even in the absence of injury, should receive immediate treatment and neurologic or neurosurgical evaluation. Minor trauma warrants a single factor infusion calculated to raise the plasma level to 40% to 50% of normal. Significant trauma associated with neurologic signs, bleeding, or requiring surgical intervention demands 10 to 14 days of continuous replacement therapy to maintain factor levels between 30% to 50% of normal. The use of measures to control increased intracranial pressure and cerebral edema is indicated when these complications are present. The use of prophylactic anticonvulsants in patients with documented hemorrhage or history of seizures is also recommended. The importance of prompt referral to an appropriate tertiary care center where hematologic, neurologic, and/or surgical staffs as well as diagnostic facilities are available cannot be overemphasized.

Acknowledgment

The authors thank Ms. Barbara Bengtson for secretarial assistance in the preparation of this manuscript.

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Oncology

Choosing a Sunscreen

Mary V. Relling, B.S., R.Ph.
Robert T. Dorr, M.S., R.Ph.

Editors:
David S. Alberts, M.D.
Ellen Chase, B.S.

Introduction

Exposure to ultraviolet (UV) light rays from the sun can result in short-term damage such as sunburn and in long-term damage such as premature aging of the skin and skin cancer.[1] People at high risk for developing skin cancer are those with a fair complexion or blue eyes,[2] and those with close relatives who have had skin cancer. These people should be especially cautious about their exposure to the sun. Southern Arizona has also been shown to be in a very high risk area for the development of skin cancer (20% to 30% greater incidence than all other areas reported in the literature.)[3]

There are a few facts to keep in mind about suntan and sunburn. First, the change in skin color is not immediate following sun exposure. Redness usually begins two to eight hours after exposure and peaks at 24 hours. In contrast, the more durable "tan" begins days after exposure and development doesn't peak for about three weeks.[4] Secondly, the most intense sunlight is from 10:00 a.m. to 2:00 p.m., when there is the shortest distance for the rays to travel through the stratosphere.[4] Thirdly, staying in the shade will not completely prevent sunburn because of significant sunlight scatter and reflection, particularly from concrete or water. This is especially pertinent for sun exposure occurring on

Table 1
Skin Type—SPF Requirements[6]

	Skin Type	SPF Required
I	Always burns easily, never tans	10 — 15
II	Usually burns easily, tans minimally	6 — 12
III	Burns moderately, tans gradually	4 — 6
IV	Burns minimally, tans readily	2 — 4
V	Rarely burns, tans profusely	—
VI	Never burns, deeply pigmented	—

Table 2
Sunscreening Chemicals[1]

Aminobenzoic acid (PABA)
Cinoxate
Diethanolamine p-methoxycinnamate
Diagalloyl trioleate
Ethyl 4-(bishydroxypropyl) aminobenzoate
2-Ethylhexyl-2-cyano-3, 3-diphenylacrylate
Ethylhexyl p-methoxycinnamate
2-Ethylhexyl salicylate
Glyceryl aminobenzoate
Homosalate
Lawsone with dihydroxyacetone
Menthyl anthranilate
Octyldimethyl PABA
Octylsalicylate
Padimate A
Padimate O
2-Phenylbenzimidazole-5-sulfonic acid
Red Petrolatum
Sulisobenzone
Titanium dioxide
Triethanolamine Salicylate

Table 3
Sunscreens with SPF of 2—4

Lotions	
Aloe Butter Dark Tanning Lotions (Aloe Butter)	4
Coppertone Suntan Lotion Moderate Protection (Plough)	4
de Lancome pour Le Sport Conditioning Tanning Lotion (Lancome)	4
Fashion Tan (Aloe Cream Labs)	4
FM Suntan Lotions (Fed Mart)	4
For Faces Only Dark Tanning Lotion for the Face by Coppertone (Plough)	2
For Faces Only Suntanning Lotion for the Face by Coppertone (Plough)	4
4-SPF Suntan Encourager (Clinique)	4
Golden Tropics Dark Tanning Lotion with PABA (Golden Tropics)	4
Hawaiian Style Dark Tanning Lotion (Fed Mart)	4
Hawaiian Tropic Dark Tanning Lotion with Sunscreen (Tanning Research)	4
K Mart Suntan Lotion (K Mart)	4
Mmm! What a Tan! Deep Tanning Lotion (Personal Care Products)	2

From: University of Arizona Health Sciences Center, Ms. Relling, College of Pharmacy; Mr. Dorr, Cancer Center, Tucson, Arizona 85724.

Mmm! What a Tan! Dark Tanning Lotion (Personal Care Products)	2
Orlane Methode Solaire Sun Protection Body Lotion (Orlane)	4
Physicians Formula Suntan Lotion (Physicians Formula)	4
Pre Sun Sunscreen Lotion (Westwood)	4
QT Suntan Lotion (Coppertone)	2
Revco Suntan Lotion	4
Sea & Ski Golden Tan Lotion (Sea & Ski)	4
Skaggs Brand Hawaiian Style Dark Tanning Lotion	2
Skin Saver (Almay)	4
Sun Dare Sunscreen Clear Lotion Moderate Sun Protection (Texas Pharmacal)	4
Sun Dare Sunscreen Creamy Lotion Moderate Sun Protection (Texas Pharmacal)	4
Sundown Sunscreen Moderate Protection (Johnson & Johnson)	4
Suntan Lotion with Cocoa Butter (Thrifty)	4
Tropical Blend Dark Tanning Lotion (Plough)	2
Tropical Blend Facial Dark Tanning Lotion (Plough)	2
Tropical Blend Sunscreen Lotion (Plough)	4
Ultima II Scientific Bronzing Lotion (Charles Revson)	4
Oils	
Aloe Butter Tropical Aloe Tanning Oil (Aloe Butter)	2
Bain de Soleil Suntan Oil (Charles of the Ritz)	2
Coppertone Lite Formula Dark Tanning Oil (Plough)	2
Dark Tanning Oil (Plough)	2
DeLeal Sun Oil (Cutter)	2
FM Suntan Oil (Fed Mart)	2
Golden Tropics Dark Tanning Oil with PABA (Golden Tropics)	4
Hang Ten Dark Tropical Tanning Oil (Cosmetics Plus)	2
Hawaiian Style Dark Tanning Oil (Fed Mart)	2
Hawaiian Tropic Dark Tanning Oil with Sunscreens (Tanning Research)	2
K Mart Suntan Oil (K Mart)	2
Mmm! What a Tan! Dark Tanning Oil (Personal Care Products)	2
Revco Dark Tanning Oil (Revco)	2
Sea & Ski Dark Tanning Oil (Sea & Ski)	2
Skaggs Brand Hawaiian Style Dark Tanning Oil (Skaggs)	2
Sun Tanning Oil (Estee Lauder)	2
Super Rich Tan (Aloe Cream Labs)	2
Sure Tan Oil (Bonne Bell)	2
Thrifty Hawaiian Style Dark Tanning Oil (Thrifty)	2
Tropical Blend Lite Dark Tanning Oil (Plough)	2
Tropical Blend Dark Tanning Oil (Plough)	2
Ultima II Scientific Deep Bronzing Oil (Charles Revson)	2
Gels	
Bain de Soleil Suntan Gel Orange (Charles of the Ritz)	4
Bronzing Oil Gel (Estee Lauder)	4
Suncare Dark Tanning Gel (Elizabeth Arden)	2
Creams	
Coppertone Dark Tanning Butter (Plough)	2
Suncare Sun Tanning Cream (Elizabeth Arden)	4

beaches or pool decking.[5] Even on cloudy days, one can still burn easily because ultraviolet light is not effectively screened by clouds.[1] In addition, a slight breeze can produce a deceiving sense of coolness to irradiated skin, thus increasing the potential for greater exposure.[6]

Skin Types

Skin tolerance to sunlight can be grouped as follows: Skin Type I—always burns easily, never tans; Skin Type II—usually burns easily and tans minimally; Skin Type III—burns moderately and tans gradually; Skin Type IV—burns minimally, tans readily.[5] All of these skin types require a sunscreen. Individuals with skin types V and VI tan readily and do not burn, thus obviating a need for a sunscreen. If one needs or desires to be in the sun for any length of time (as little as 15 to 20 minutes) there are many sunscreen products from which to choose.

Sun Protection Factor (SPF) Ratings

There are two types of preparations: sunscreens which contain chemicals that absorb specific bands of ultraviolet light (Table 1); and sunshades or blocks, which contain opaque materials (e.g., zinc oxide) that reflect all incident light rays. The Food and Drug Administration (FDA) has developed a numerical system for designating the degree to which a sunscreen absorbs ultraviolet light based on a sun protection factor or SPF. The SPF is a ratio of the minimum time required to produce erythema or redness with a sunscreen product to the time required to produce the same redness without the sunscreen. It is determined experimentally in subjects exposed to a solarsimulating light source, usually a xenon-arc lamp. Thus, an SPF of 2 implies that the product provides twice the protection the user would have had with no sunscreen. Currently, the highest SPF rating used by the Food and Drug Administration is 15, and the scale goes from 2 to 15. A number of products, however, have actually been tested to have SPF ratings over 20. Table 2 lists the skin types and the required SPF ratings. The subsequent tables (3 through 9) list the SPF values for some specific sunscreen products.

Pharmaceutical Aspects

In addition to appropriate skin protection factor, there are other factors to consider in choosing a sunscreen. For instance, sunscreens with an alcoholic base may be more cosmetically acceptable but should not be used on eczematous or otherwise inflamed skin. On the other hand, PABA and PABA esters found in many sunscreens may stain clothing a yellow color. A number of other pharmaceutical aspects are important in choosing sunscreens which are available as lotions, oils, creams, or even gels.

In general, a lotion represents the lightest fluid vehicle for carrying a sunscreening agent. Lotions typically contain alcohol. Thus, with sunscreen *lotions*, the liquid carrying the sunscreen dissipates rapidly. The sun screening effect is also lost more rapidly than with a cream containing the identical chemicals.[7] In this regard, particular sunscreening chemicals are also inherently more resistant to water washoff that occurs

Table 4
Sunscreens with SPF 5—6

Lotions	
Coppertone Shade Sunscreen Lotion (Plough)	6
de Lancome Pour le Sport Protective Tanning Lotion (Lancome)	6
Deleal Sun Milk (Cutter)	6
For Faces Only Sunscreening Lotion for the Face by Coppertone (Plough)	6
Moisturizing Sun Lotion (Estee Lauder)	6
PABA Plus Skin Moisturizer (DEP Corp.)	5
Partial Eclipse Suntan Lotion (Herbert)	5
Sea & Ski Suntan Lotion (Sea & Ski)	6
Sundown Sunscreen Extra Protection (Johnson & Johnson)	6
Sun Tan Plus (Bonne Bell)	6
Ultima II Scientific Protective Tanning Lotion (Charles Revson)	6
Creams	
Bain de Soleil Suntan Creme White (Charles of the Ritz)	6
Orlane Methode Solaire Sun Protection Face Cream (Orlane)	6
Suncare Gentle Tanning Cream (Elizebeth Arden)	6
Gels	
Pabagel Pure PABA Sunscreen Gel (Owen)	6
For Lips, Nose	
Eclipse Lip & Face Protectant (Herbert)	6

Table 5
Sunscreens with SPF of 7—8

Lotions	
Bain de Soleil Sun-Filter Lotion (Charles of the Ritz)	8
Before Sun Sunscreen Lotion (Fed Mart)	8
Coppertone Shade Plus Water-Resistant Sunscreen Lotion (Plough)	8
de Lancome Pour le Sport Sun Filter Lotion (Lancome)	8
Hawaiian Tropic Pre Tan Super Sunscreen Lotion (Tanning Research)	8
Mmm! What a Tan! Sunscreen Lotion (Personal Care Products)	8
Orlane Methode Solaire Sun Protection Body Lotion (Orlane)	8
Physicians Formula Maximal Protection Lotion (Physicians Formula)	8
Pre Sun Sunscreen Lotion (Westwood)	8
Revco Sunscreen Lotion (Revco)	8
Skaggs Brand Sunscreen (Skaggs)	8
Sundown Sunscreen Maximal Protection (Johnson & Johnson)	8
Thrifty Sunscreen (Thrifty)	8
Ultima II Scientific Maximal Protection Tanning Lotion (Charles Revson)	8
Creams	
8-SPF Sun Block (Clinique)	8
Suncare Sun Shading Cream (Elizabeth Arden)	8
For Lips, Nose	
Coppertone Noskote (Plough)	8
Ultima II Scientific Maximal Protection Tanning Stick (Charles Revson)	8

Table 6
Sunscreens with SPF of 9—14

Lotions	
Block Out Clear Lotion (Sea & Ski)	10
Eclipse Sunscreen Lotion-Original (Herbert)	10
Hawaiian Gold Pabatan	12
Oil-Free Sun Block (Clinique)	10
Pabafilm Sunscreen Lotion (Sea & Ski)	10
Snootie Sunscreen Lotion (Sea & Ski)	10
Sun Bloc (Bonne Bell)	12
Sundare Sunscreen Lotion-Maximal Protection (Cooper Care)	10
Creams	
Deleal Sun Cream (Cutter Labs)	10
Orlane Methode Solaire Sun Protection Face Cream (Orlane)	12
Ultra-Violet Screening Creme (Estee Lauder)	10
Gels	
Golden Tropics Solar Screen Gel (Golden Tropics)	10
For Lips, Nose	
de Lancome Pour le Sport Eye and Lip Protector (Lancome)	12

Table 7
Sunscreens with SPF of 15 and Above

Lotions	
Block Out Cream Lotion (Sea & Ski)	15
Coppertone Super Shade Sunblocking Lotion (Plough)	15
Eclipse Sunscreen Lotion-Total (Herbert)	15
For Faces Only Sunblocking Lotion by Coppertone (Plough)	15
Golden Tropics Solar Screen Lotion (Golden Tropics)	15
Hawaiian Tropic Total Sun Block Lotion (Tanning Research)	15
Physicians Formula Ultra Sun Protection Lotion (Physicians Formula)	15
Pre Sun (Westwood)	15
SunDare Sunscreen Lotion-Ultra Protection (Cooper Care)	15
Sundown Sunblock (Johnson & Johnson)	15
Sun Factor 15 Total Sun Protection (Aloe Butter)	15
Creams	
Bain de Soleil Ultra Sun Block Creme (Charles of the Ritz)	15
Frances Denney Sun Block (Frances Denney)	16
19 SPF Sun Block (Clinique)	19
Orlane Methode Solaire Sun Protection Cream (Orlane)	18
Sun Block Creme (Estee Lauder)	23
Suncare Sun Blocking Cream (Elizabeth Arden)	15
For Lips, Nose	
Ultima II Scientific Sun Block Stick (Charles Revson)	15

Table 8
No Sunscreen

Lotions
Apres le Soleil (Charles of the Ritz)
Bain de Soleil Tan Finishing Suncolor (Charles of the Ritz)
Hawaiian Tropic Forever Tan (Tanning Research)
Suncare Self Tanning Lotion (Elizabeth Arden)
Tahitian Tan Dark Tanning Lotion (Tahitian Tan Products)
Tan Care by Coppertone (Plough)
Tropic Sun Dark Tanning Lotion (Sea & Ski)
Tropical Blend After Sun Lotion by Coppertone (Plough)
Ultima II Lasting Tan Moisture Lotion (Charles Revson)

Oils
Aloe Butter Dark Tanning Oil (Aloe Butter)
Aloe Butter Tropical Tanning Blend (Aloe Butter)
Hawaiian Tropic Dark Tanning Oil (Tanning Research)
Hawaiian Tropic Royal Tanning Blend (Tanning Research)
Suncare Fast Bronzing Oil (Elizabeth Arden)
Sun Tamer Deep Tanning Oil (Almay)
Tropical Deluxe Formula Dark Tanning Oil (Bain de Soleil)
Tropic Sun Dark Tanning Oil (Sea & Ski)
Walgreens Baby Oil (Walgreens)

Creams
Piz Buin Exclusive Liquid Cream (Greiter)
Sun Tan Creme (Thrifty)
Super Skin Creme of Cocoa Butter (Bethlin)

Table 9
Unclassified (but do contain a sunscreen)

Lotions
Nature's Finest Sunbronzed Super Screen (Walgreens)
Sun Dare Sunscreen (Texas Pharmacal)
Sun System First Exposure Lotion (Sun Life)
Sudden Tan Bronzing Lotion by Coppertone (Plough)

Oils
Cocoa Tan Dark Tanning Oil (Golden Tropics)
Negasol (Lydia O'Leary)
Prime Suntan Oil (Prime)
Sun System Acceleration Oil (Sun Life)

Creams
Native Tan Cover-up (Sun Fun Products)
PABAFILM Sunscreen Gel (Owen)
Pre Sun 5% PABA Gel (Westwood)
Prime PABA Sunscreen Skin Creme (Prime)
Sol-Bar (Person & Covey)
Sun System Acceleration Creme (Sun Life)

For Lips, Nose
Cool Lips, (Golden Tropics)
Coppertone LipKote (Plough)
Hawaiian Tropic Sunscreen Super Sun Protector (Tanning Research)
Physicians Formula Protective Lip Care (Physicians Formula)
Pre Sun Sunscreen Lip Protection (Westwood)
Sun Stick (Texas Pharmacal)

during swimming. For example, 5% PABA (SPF 5) and 8% homomethylsalicylate (SPF 4) each lose roughly half their SPF rating over a five-hour period with no washoff exposure. When exposed to water washoff conditions, 5% PABA loses even more SPF down to a rating of only 1.2. In contrast, the combination of 8% octyldimethyl PABA and 3% oxybenzone (found in Super Shade® with an SPF of 21.0 loses no significant SPF rating over time, whether exposed to water or not.[7]

Oils. Sunscreens dispersed into oils provide a more sustained retention of the chemical on the skin. A problem is the messy cosmetic nature of the vehicle. Loss of washoff is similar to the lotions. *Creams* represent a solid emulsion of the sunscreen into a "stiff" or semi-solid final product often containing alcohol. As such, they and the *gel* preparations (colloidal dispersions of a liquid drug into a solid form) provide the most retentive sunscreen vehicles. In other words, they tend to enhance retention and resist washoff to the greatest degree. Thus, it is clear that sunscreens may vary greatly with regard to SPF rating and the retention of that protective rating over time.[8-11]

Drug-Sunlight Interactions

People who are allergic to benzocaine, procaine, paraphenylenediamine and sulfanilamide may have allergic reactions to PABA, and people allergic to thiazides or sulfa drugs may have a skin reaction to sunscreens containing PABA or PABA esters.[12] In these cases, a sunscreen with a different active ingredient should be chosen.

A number of other drugs can rarely produce photosensitivity reactions upon exposure of an individual to the sun. These reactions are idiosyncratic and are thus difficult to predict. Nonetheless, patients receiving potentially photosensitizing drugs should avoid sunlight as much as possible and use a sunscreen to protect exposed areas. Some photosensitizing drugs include: antihistamines, coal tar, estrogens, griseofulvin, haloperidol, nalidixic acid, phenothiazines, such as prochlorperazine (Compazine®), sulfonamides, sulfonylureas, tetracycline, thiazide, diuretics (e.g., hydrochlorothiazide), tricyclic antidepressants (e.g., amitryptyline or Elavil®), tretinoin, and trimethadione.[13]

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Psychiatric Disorders

Anxiety-Spectrum Disturbances

Thomas E. Bittker, M.D.

Editor:
Thomas E. Bittker, M.D.

"I have given up, after many negative experiences, painful and frightening to me and to others like me. But because I can present no tangible or specific cause, and no concrete testable symptoms, the professional responses have ranged from, 'get more sleep,' 'take a warm bath,' 'read a good book,' to 'you just *think* you don't feel well,' or 'I've got *sick* patients to see.'

"It is early Sunday afternoon, I have been feeling increasingly agitated since last night. When R prepared to go to mass this morning, I pretended to be sleeping, knowing that I can't risk placing myself in the emotional cocoon of church, fearing that in my terror I might disrupt the service in some way: panicking and running out of the church, crying out to the priest for help to cope with this unknown and unnameable dread. R is due back from mass soon. I have been lying in be panting, drenched with perspiration, although the roo is cold. I know that I must try to achieve a facade o normalcy, so I arise to dress. Brushing my teeth make me gag and retch. I hold on to the sink with both clamm hands, trying to ride out the waves of nausea. Don dressing, I strike the pose I wish R to find me in, sitting i a lounge chair, absorbed in reading. It is several minute before I realize that I am holding the book upside down external details penetrate my rising panic. R comes in. am crying silently behind my book I hold rigidly befor my unseeing eyes. She announces that she's got paper to grade and retreats to her bedroom shutting the door Granted a reprieve, I lie back in the chair whispering 'Oh God, oh God, oh God' over and over, my breath i shuddering from the tremors shaking my body. I hug m shaking body, rocking back and forth rhythmicall trying to comfort myself, fantasizing that someon reassuring is holding me."

Anonymou

Up to twelve and one-half percent of Americans suffe from anxiety-spectrum disturbances. The incidence o panic disorder alone in the general population may be as high as five percent and in a population of cardiac patients, as high as fourteen percent.[1] Add to this fiv percent of the population who suffer from acute or chronic "nonpanic" anxiety states; an additional on percent suffering from simple phobias; and a additional half percent who suffer from obsessive compulsive disorder, and we emerge with an estimated twelve and one-half percent of the general population who suffer from what I would like to term the anxiety spectrum syndromes.[2] Unfortunately, these syndromes are not readily discriminated by the primary provider; their mismanagement yields not only continuing misery for the patient but enhances the likelihood that the patient's self-management attempt may emerge as frank alcoholism or other chemical abuse.[3] Several recent studies have highlighted the relationship between anxiety and alcohol.[4-6] All of these studies underscore what we know intuitively: Anxiety patients do not endure anxiety well. Anxiety will be expressed as panic, isolated phobias, social withdrawal, obsessions and compulsions, multiple somatic symptoms, drug or alcohol abuse.[7] Many physicians, pressed for time and

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From: Thomas E. Bittker, M.D., Medical Director, Western Region, CIGNA Health Plans of Arizona, and Associate in Psychiatry, University of Arizona Medical School, Tucson, Arizona. Reprint request to Thomas E. Bittker, M.D., CIGNA Healthplan of Arizona, Inc., 4425 West Olive Avenue, Glendale, Arizona 85302.

iscouraged by the persistence of anxiety complaints, tempt to distance themselves from their anxious atients. Interviews are brief, infrequent, and usually rovoked by patient's symptoms rather than physician iitiative. In an effort to provide something to alleviate ıe patient's distress, the physician will offer a wide ɔectrum of tranquilizing medication, typically ben- ɔdiazepines. Fortunately, benzodiazepines are extra- rdinarily safe. Although addiction occurs, the equency of addiction is much less than experienced by ther classes of sedative-hypnotic agents. On the other and, benzodiazepines do compromise judgment, can npair learning, may increase sensitivity to pain, rovoke depression, and when associated with alcohol ıay have, albeit rarely, lethal consequences.[8] If with- rawn suddenly, seizures may occur, particularly with rief, half-life agents.[9]

I take a partisan view regarding the anxiety-spectrum isturbances. First, I believe the disorders are readily eatable if appropriately diagnosed.

Second, judicious use of pharmaceutical agents is arranted in treating these disorders.

Third, the reluctance to employ drugs in the treatment f these patients on the basis of their artificiality seems pecious. Admittedly, drugs offer an external nanipulation of the patient's chemistry which was not vailable while man's ancestors were wandering in the ilderness. On the other hand, neither were auto- nobiles, airplanes, telephones, watches, attorneys, ivorce courts, bankruptcies, and other phenomena hat challenge our capacity to cope in the late Twentieth entury.

efining Terms

Anxiety[10] is a disagreeable emotional state char- cterized by feelings of impending danger, uneasiness, ension or apprehension. The cause may be:

1. Biochemical; e.g., adrenalin release, caffeineism, rug withdrawal, blood pH shift, or anoxia.
2. Under or over stimulation.
3. Inability to cope with task demands.
4. Unrecognized intrapsychic conflict.

Anxiety is associated with the characteristic pattern of utomatic nervous system discharge involving altered espiration rate, increased heart rate, pallor, dryness of nouth, increased sweating, trembling, and feelings of veakness. Every organ system in the body, including the nechanism involving sexual fulfillment, may participate n the expression of anxiety.

Anxiety should be differentiated from *fear*, characterized by the above manifestatons but consequent to an external danger that is present or threatens to materialize.

Panic is the state of extreme, acute, intense anxiety accompanied by disorganization of personality and function.

Free-floating anxiety consists of a feeling of dread that the patient cannot logically assign to a specific cause. In an effort to limit the scope of their symptoms, patients suffering from free-floating anxiety seek to attach their anxiety to some suitable object or idea; if it is explainable, it is less threatening.

Generalized anxiety disorder is a chronic state characterized by frequent episodes of free-floating anxiety. It is marked by malaise, irritability, self-recrimination, second-guessing, pangs of conscience and episodes of panic. There is hypervigilance and hypersensitivity to ordinary perceptions, the consequences of which are frequent startle reactions occurring with minimal sensory provocation. Cardiac palpitations, breathlessness, light-headedness, nausea, dryness of mouth, diarrhea, compulsive eating, urinary frequency, blurring of vision, physical weakness, and tremors may occur chronically as a part of the generalized anxiety state. The signs are consistent with adrenalin overdose. In an effort to reduce the unpleasant sensations associated with anxiety, the patient develops a variety of defensive devices such as repression of impulses, denial, rationalization, intellectualization, and isolation of one's consciousness from one's feelings.

Common Syndrome Emerging from Displacement of Anxiety

Displacement of anxiety so that the symptoms manifest in a more circumscribed fashion is a common defensive device. The following syndromes represent unconscious attempts to control the anxiety by limiting its expression:

A. Hypochondriasis. Characterized by unrealistic interpretations of physicial signs or sensation leading to the preoccupation with the fear or belief of having a disease. The hypochondriacal patient will seek frequent reassurance from health professionals. Hypochondriasis consists of a preoccupation with one organ system. Its onset is typically in the third and fourth decade.

B. Psychogenic pain. Heightened sensitivity to pain related to environmental stress or interpersonal conflict occurring in the absence of underlying physical disease or in gross excess of what would be expected from whatever physicial findings are present.

C. Somatization disorder. Manifested by the presence of multiple vague somatic complaints. These complaints may be referred to any part of the body, but they are most often in the form of headaches, light-headedness, nausea and vomiting, abdominal pain, bowel difficulties and fatigue. In contrast to hypochondriasis, somatization disorder typically occurs in women and is characterized by the preoccuption with mulitple organ systems with onset of symptoms as early as the second decade.

D. Conversion disorder, the essential feature of which is the presence of physical symptoms suggesting physical illness for which there are no demonstrable organic findings to explain the symptoms.

E. Obsessive compulsive disorders have certain features in common:

1. An idea or an impulse intrudes insistently, persistently, and impellingly into the person's conscious awareness.
2. A feeling of anxious dread accompanies this central

manifestation and frequently leads the person to take countermeasures against the initial idea or impulse.

3. The obsession or compulsion is ego-alien—that is, it is experienced as being foreign to and not a usual part of one's self as a psychological being.

4. No matter how vivid and compelling the obsession or compulsion, the person recognizes it as absurd and irrational; he retains insight.

5. Finally, the person suffering from the manifestations feels a strong need to resist them.

F. Finally, there are the phobic disorders. These include simple phobias, agoraphobia, and social phobia. The essential features of the simple phobia is that the source of the anxiety is externalized and discrete. Anticipatory anxiety leads to the avoidance of the situation felt to be dangerous. Sudden exposure to the phobic stimulus may produce a panic attack.

Agoraphobia is characterized by rational fear of leaving a familiar setting, such as the home. The phobic symptoms generally appear after a preliminary phase of panic attacks leading to the sense of anticipatory helplessness away from the familiar setting. Common phobic situations include crowds, closed spaces, and tunnels where access to help is limited.

Social phobias are marked by fears of situations in which one is exposed to the scrutiny of others. There is marked anticipatory anxiety when confronted with the necessity of entering these situations. The anxiety is predominantly one of acting or performing publicly in a shameful manner.

Space does not permit a detailed review of each one of these anxiety-spectrum disturbances. In the space remaining, I would like to focus on a review of phobic anxiety since it is frequently misdiagnosed and often mistreated.

Some of the most interesting investigations in the field of phobic anxiety have been performed by David Sheehan of Harvard.[11,12] Sheehan's major contribution is to outline the distinction between endogenous and exogenously based phobic anxiety, Figure 1.

Phobic Anxiety and Panic Disorder

Medical Disorders

A fundamental concern in evaluating any anxiety syndrome is to consider the possibility of a primary medical disorder in the etiology. Common medical disorders manifesting in anxiety include the following:

A. Anemias.

B. Respiratory difficulties; e.g., chronic obstructive lung disease and asthma.

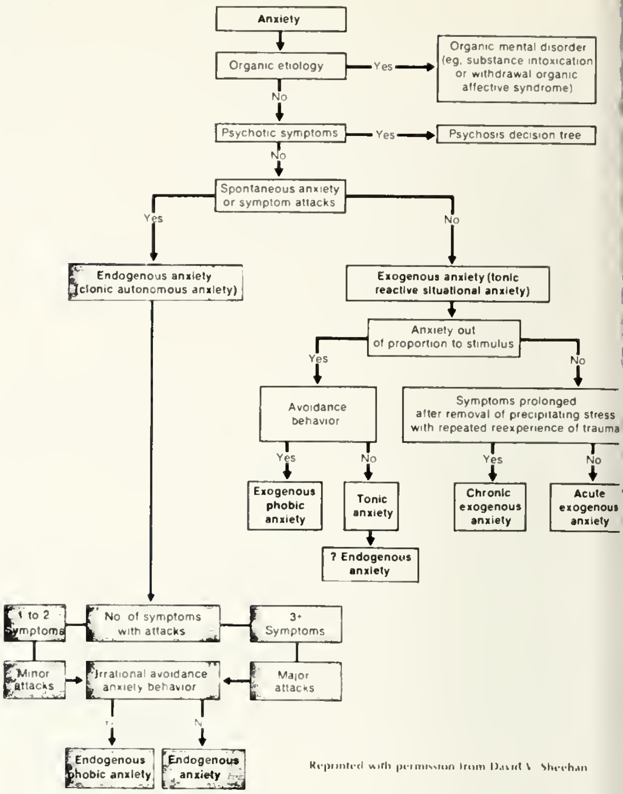
C. Cardiac malfunction; congestive heart failure, impending myocardial infarction.

D. Endocrinopathies such as abnormalities of the thyroid, parathyroid, adrenal or pancreas.

E. Neoplastic diseases, particularly endocrine producing tumors, phaeochromocytoma, carcinoid syndrome.

F. Drug induced or drug withdrawal states; alcohol or sedative withdrawal, amphetamine or cocaine use, caffeineism.

Figure 1 The "decision tree" approach to diagnosing anxiety


Anxiety
Organic etiology
Yes
Organic mental disorder (eg, substance intoxication or withdrawal organic affective syndrome)
No
Psychotic symptoms
Yes
Psychosis decision tree
No
Spontaneous anxiety or symptom attacks
Yes
No
Endogenous anxiety (clonic autonomous anxiety)
Exogenous anxiety (tonic reactive situational anxiety)
Anxiety out of proportion to stimulus
Yes
No
Avoidance behavior
Symptoms prolonged after removal of precipitating stress with repeated reexperience of trauma
Yes
No
Yes
No
Exogenous phobic anxiety
Tonic anxiety
Chronic exogenous anxiety
Acute exogenous anxiety
? Endogenous anxiety
1 to 2 symptoms
No of symptoms with attacks
3+ Symptoms
Minor attacks
Irrational avoidance anxiety behavior
Major attacks
Y
N
Endogenous phobic anxiety
Endogenous anxiety

Reprinted with permission from David V. Sheehan

G. Neurologic disorder; e.g., multiple sclerosis o essential tremor.

Essential Tremor

Essential tremor is a particularly interesting syndrome in that it is readily treatable, if properly recognized. I unrecognized, patients will frequently self-medicate with alcohol to the point that alcohol dependency may develop.[13] Essential tremor is inherited as an autosoma dominant disorder; it is likely to emerge with increasing age; and clinically manifested by an eight to twelve beat-per-second intentional tremor.

Anxiety as a Consequence of Psychosis

After evaluating whether a medical disorder may be contributing to anxiety, consider whether the anxiety is a manifestation of psychosis.

Spontaneous Anxiety Syndrome: Phobic Anxiety and Panic Disorders

Clinical research findings of the past two decades permit us to precisely distinguish endogenous anxiety from other (exogenous) phobia conditions. Endogenous conditions characteristically emerge from "out of the blue," build up in intensity until they become intolerable and are typically accompanied by tightened sensation in the chest, pounding in the head and ears, sweating palms, and a foreboding of doom. Endogenous panic episodes can be blocked by the administration of tricyclic antidepressants or monoamine oxidase inhibitors.

Benzodiazepines, barbituates, alcohol and other sedatives can ameliorate the anticipatory anxiety but have no effect on panic episodes themselves. The only ception to this appears to be the triazolo benzo- azepine (alprazolam/Xanas). Daily dosages for the eatment of panic disorders range from 1.5 to 6.0 mg in e adult patient. Another possible exception appears to : the triazolo antidepressant trazodone/Deysyrel. aily dosages range from 100 to 400 mg in the adult tient. Panic attacks occur at times other than during arked physical exertion or during a life threatening uation. It may not necessarily be provoked by ex- osure to phobic stimulus. These individuals are never rtain when panic attacks will occur; consequently, ey suffer intolerable dread when entering any new uation or separated from a comfortable setting.

The essential feature of panic disorder is recurrent nic attacks not necessarily provoked by an outside mulus. The symptoms are characterized by wide- read autonomic discharge. Panic attacks are anifested by a sudden onset at discrete periods of nprecipitated intense apprehension, fearfulness, rror, feelings of impending doom. The most common mptoms experienced during attack are: dypsnea; lpitations; chest pain or discomfort; choking or uttering sensations; dizziness; vertigo or unsteady elings; feelings of unreality; hot and cold flashes; veating; faintness; trembling or shaking; and fear of ying, going crazy or doing something uncontrolled. ttacks usually last ten to thirty minutes, or rarely hours. ne disorder is episodic, often clearing spontaneously ter six to twelve months.

enetic Aspects of Panic Disorder

That panic is a genetically influenced disease has been nown from the first descriptions of the syndrome in the arly part of this century. It was later confirmed by two mily history studies. About 17 percent[14] of first degree elatives of identified panic disorder patients suffer efinite panic disorder. When probable cases were ncluded, the figure rises to 25 percent. In addition, nere seems to be relationship between panic disorder nd mitral valve prolapse. Gaffney and Blomqvist[15] have udied the relationship between anxiety and mitral alve prolapse syndrome. Mitral valve prolapse is a ondition in which the mitral valve moves abnormally nto the left atrium during ventricular systole. Reasons or this condition include a myxomatous degeneration f the mitral valve as well as abnormalities of the mitral nnulus, capillary muscles, leaflets, chordae tendinae, or eft ventricle. The affected patient who presents for eatment is usually a woman and often has a distinctive ll, thin habitus. Gaffney speculates that the prolapse self is only a marker for a systemic disorder consisting f skeletal abnormalities, myxomatous degeneration of ne mitral valve, and autonomic nervous system ysfunction. Patients with panic disorders without mitral alve prolapse may be part of the same syndrome vithout myxomatous leaflet degeneration.

pecial Considerations in Treating Panic Disorders

Anxious patients have low tolerance for drug side ffects. Consequently, dosage should be progressed radually. The administration of alprazolam, for example, should commence with 0.5 mg three times a day and may progress gradually to as much as 6 mg per day in divided doses. Note that these high dose regimens of alprazolam are not FDA approved but have been found to be without substantial hazard as long as withdrawal of medication is gradual.

The most effective agents in treating endogenous, phobic anxiety are the monoamine oxidase inhibitors, particularly phenelzine (Nardil). Phenelzine should be given in dosages sufficient to inhibit 80 percent of platelet monoamine oxidase.[11] Daily dosages range from 30 to 90 mg in the adult patient. Propranalol has been useful in dealing with the motoric and cardiac components of anxiety, but has only a minimal effect on the patient's subjective state. Daily dosages for the treatment of essential tremor range from 40 to 160 mg in adult patients. It is most useful in the treatment of essential tremors and in the treatment of social phobias where anxiety is focused around the embarrassment of tremors in public.

Treatment Strategies: Convey Understanding of Problem

Develop a detailed understanding of the patient's symptoms and convey to the patient your understanding. Most anxious patients at one time or another fear going crazy. To be reassured that another person appreciates the terror without belittling it, help restore boundaries on the experience.

Pharmacotherapy:

Provide relief using pharmacologic agents. Anticipatory anxiety is best treated with benzodiazepines; however, benzodiazepines risk the possibility of abuse, albeit remote. Heterocyclic antidepressants and monoamine oxidase inhibitors both raise the threshold that generalize anxiety and inhibit panic attacks. Unfortunately, the side effects of these agents often further frighten the patient. Two new agents, both containing triazolo rings, alprazolam (Xanax) and trazodone (Desyrel) have both been shown to be effective as antidepressants as well as antianxiety agents.[16] These agents have the advantage of being relatively low in toxicity (the principal side effect is drowsiness and postural hypotension) and are of intermediate half life so that if the bulk of the dose is given late in the day, the hypnotic effects may not interfere with morning alertness. In addition, these two major side effects become less severe after seven to ten days of treatment. Like all agents, these should be started gradually and withdrawn gradually.

Common Features in the Psychotherapy of Anxiety

The biological treatments of the anxiety-spectrum disturbances, by reducing arousal to manageable levels, permit the patient to learn more effective ways of coping. Effective psychotherapy has four features in common: the induction of mastery, detached self-observation, the development of relaxation skills, and, when indicated, family treatment.

Common mastery experiences include in-vivo exposure and systemic desensitization. In-vivo exposure demands that the patient actually experience exposure to the dreaded situation, usually in the presence of the therapist, with the intention of learning that anxiety ultimately diminishes rather than increases when the patient conquers the temptation to flee or avoid the provocative stimulus.

Systematic desensitization invloves the coupling of relaxation or assertive behavior with progressively more intense, anxiety-provoking, images. Typically, systematic desensitization is taught in the office and, once mastered, is continued by the patient in the home.

In teaching detached self-observation, the therapist encourages the patient to observe himself as he experiences anxiety. Consciousness becomes rooted in the observing self rather than the anxious self.

Relaxation skills, a component of the systematic desensitization program, are taught in the office, but must be maintained by daily practice. Once learned, they may be employed both to prevent anxiety and to decrease anxiety.

Finally, working in a couple or family context, permits an understanding of the interpersonal reinforcers of the symptom and the modification of these reinforcers.

Once symptoms have been relieved, assist the patient in making those lifestyle changes that will mitigate the reemergence of symptoms. These include:

A. The avoidance of caffeine.

B. The commencement of an aerobic exercise program to build the patient's tolerance to lactic acid surges.

C. Self-control strategies such as meditation can be enormously helpful with these patients as long as the patient commences and sustains practice during the nonanxious periods.

Unfortunately, these strategies can be of little assistance in the midst of a panic unless the patient has practiced them previously.

Summary

The anxiety-spectrum disturbances are readily treatable if well recognized. If left untreated by the physician, the patient will likely seek some way to circumscribe the anxiety either by symbolic means (conversion disorder) or by chemical means. A common presentation of anxiety is in the form of phobic disorders. I have reviewed the principles of management of these disorders with particular emphasis on pharmacological treatment. The motoric component of anxiety can be treated with propranalol or other agents capable of beta adrenergic blockade. Unfortunately, propranalol does not affect the subjective component of anxiety. Most benzodiazepines can affect anticipatory anxiety but do not block frank panic attacks and can be habituating. Alprazolam (Xanax) and trazodone (Desyrel) contain a triazolo ring which may confer on these drugs special properties that permit them to relieve both anxiety and depression. Alprazolam, in particular, has been found to be an agent of first choice in treatment of endogenous panic attacks largely because of the high benefit to side effect ratio. The monoamine oxidase inhibitors, more potent agents in the treatment of panic attacks, a agents of second choice because of the likelihood significant side effects, particularly hypertensive crise Once the patient is well managed on medication and provided with relief of symptoms, he/she may cor mence a course of other self-controlled strategies.

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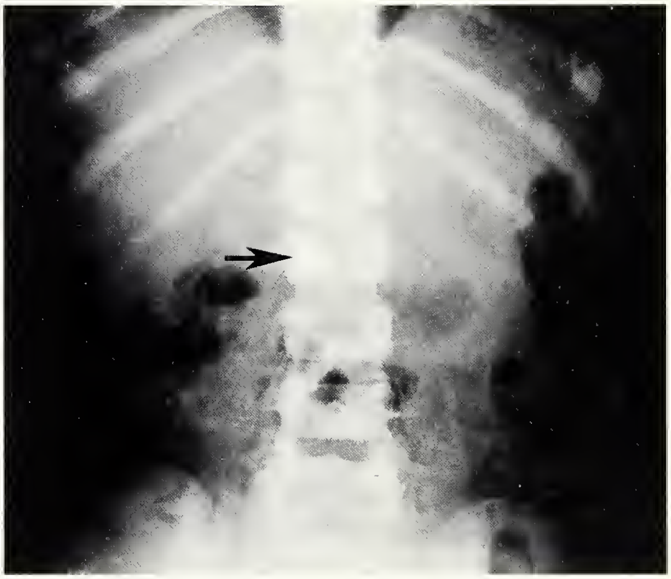
Radiology

ase of the Month No. 67

enneth M. Reger, M.D.
m B. Hunter, M.D.

litors:
nathan M. Levy, M.D.
nice Rice, M.D.

A three-year-old girl came to the Emergency Depart-
ent one hour after swallowing a foreign object. She
as asymptomatic.
Where is the foreign body (arrow) located?
What is the object, and what are the potential
omplications?



Figure

Continued on Next Page

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om: Department of Radiology, University of Arizona Health
iences Center, Tucson, Arizona 85724.

Answer: Watch Battery Ingestion

It is usually not possible to specify the location of foreign objects with only a single view. In this case, the object (a watch battery) was in the antrum of the stomach. By its position on the radiograph, it could have been in the pylorus, small bowel, transverse colon, or even on the patient's skin. Supine, upright, and lateral films may be necessary to accurately localize objects. In some cases, Gastrografin, which is less dense than metal, may be given for definite localization.

Although most ingested foreign bodies run their course through the gastrointestinal tract without incident, they can become lodged at several sites: esophagus, pylorus, ligament of Trietz, Meckel's diverticulum, or at the ileocecal valve. They may lodge in large airways if aspirated.

Watch (disc) batteries are potentially very hazardous in the gastrointestinal tract if they leak their contents. Gastric acid can corrode the metal battery casing and cause leakage or even total disintegration. Most disc batteries contain alkali (KOH or NaOH), along with variable amounts of mercuric oxide, manganese dioxide, nickel, cadmium, zinc, or silver oxide, depending upon the type and manufacturer. The alkali concentration varies from 26% to 45%. Alkali burns are most likely to occur if the battery becomes lodged. Perforation has been reported in the esophagus and in a Meckel's diverticulum, and can be fatal. Heavy metal poisoning may also occur, should the battery leak. Up to two grams of mercuric oxide is present in a disc battery and the estimated lethal dose of ionized mercuric salts is as low as 0.5 to 1.0 gram.

Although most ingested foreign bodies, and likely disc batteries, traverse the gastrointestinal tract without complication, the management of a patient who has ingested a disc battery begins with the recognition of the potential complications. Baseline radiographs, which include the chest and abdomen, should be performed for localization. Repeat radiographs at 48 hours are suggested if the battery has not passed, or at anytime symptoms develop. Inducing emesis is not recommended as it may interfere with endoscopic retrieval if this becomes necessary. If the patient is asymptomatic, cathartics are administered to speed transit. Metolopramide (Reglan) has also been used by some. Charcoal can be given as a marker for transit. Abdominal pain and peritoneal signs suggest corrosion with possible viscus perforation; surgical retrieval should be strongly considered. Plasma and urinary concentrations of heavy metals can be useful for detection of heavy metal poisoning and chelation therapy may become necessary if there is significant absorption of metallic salts.

In this case the battery passed within 48 hours without incident.

Acknowledement

We thank Albert Picchioni, Ph.D., who gracious supplied much of the above information about t contents of disc batteries.

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Surgical Treatment f Vertigo

. Phillip Daspit, M.D.

bstract

A brief discussion of peripheral balance disorders menable to surgical therapy is described. The indi-ations, types of approaches, risks and complications nd expected results are listed. Using this as a guideline, ne should have a better understanding of this often mes misunderstood topic.

Key Words: Vertigo, Surgical Treatment.

All physicians in direct patient care at some time in heir career will take a history from a dizzy patient. octors in Family Practice, Internal Medicine, Neuro-ogy, Neurosurgery, and Otolaryngology will usually see he majority of these problems. Therefore, a good vorking knowledge of how to approach the subject is ecessary.

There are many different causes of balance lysfunction and a discussion of each is not within the cope of this paper. The important aspect is to determine f the patient is in fact describing dysfunction in the eripheral or the central vestibular system. A ques-ionnaire can be of great assistance. Essentially the atient should be able to describe some type of allucination of motion. This is usually associated with pisodic changes in hearing acuity, fluctuating tinnitus nd sometimes fullness in the ears. A clear concise istory will sometimes help localize the involved inner ear. Obviously, a past history of ear surgery, head trauma, or the ingestion of ototoxic drugs is quite important.

The appropriate neurotologic evaluation involves audiometric testing, balance testing, and radiologic data after a complete physical including head and neck neurologic examination. A high index of suspicion is required if one is to diagnose benign tumors of the temporal bone when small. One must be willing to do all of the testing required including an air contrast CCT to be certain of the diagnosis. It is far more cost effective to diagnose such tumors when small than to treat the same patient when the tumor is quite large.

Once the diagnosis is made, a treatment plan must be developed. The single most important aspect is to convince the dizzy patient that he can be helped but that it may take time. Such reassurance definitely helps these patients cope with their disability. One must explain again and again.

Treatment

Most dizzy patients will do well with medical therapy. Limiting salt intake, diuretics, vestibular suppresants, vasodilators, vestibular exercises, correction of high or low blood sugars, correction of high cholesterol-triglyceride levels, evaluation and treatment of allergies (inhalant and food) and the use of a soft cervical collar can be used all or in part to treat these patients.

If after adequate follow-up the patient is still unable to cope with his symptoms, surgical therapy is discussed. Obviously, one must be certain that the problem is caused by a peripheral labyrinthine dysfunction and also must be certain as to the ear involved. The neurotologic evaluation will in most cases give this information.

The type of surgery recommended depends upon the presence or absence of serviceable hearing in the involved ear. This is defined as an ear which is still functional even with the use of hearing aids. We usually use the 50 decibel level—50% discrimination level as hearing which should be maintained.

The initial procedure used commonly is some type of endolymphatic sac manipulation. A wide mastoidectomy under general anesthesia with dissection of the sac in the posterior fossa dura is done. The location of the sac is usually constant but one may have to contend with a far forward lying sigmoid sinus or a high jugular bulb. However, the use of the operating microscope, suction irrigation and the high speed air drill plus experience in temporal bone surgey allows the neurotologic surgeon to perform such procedures with a high degree of accuracy.

The endolymphatic sac-subarachnoid shunt has been the most commonly performed initial procedure in active Meniere's ears. Approximately 65% of patients will note stabilization of hearing and alleviation of vertigo. Acceptance of a five percent chance of meningitis and/or cerebrospinal fluid leak is required.

The endolymphatic sac-mastoid shunt is gaining more popularity mainly because the results are comparable and the risk of meningitis and/or cerebrospinal fluid leak is essentially nil.

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rom: Arizona Otologic Associates, Ltd., 222 West Thomas Road, Suite 114. Phoenix, Arizona 85013.

Sac procedures are felt to be the only physiologic way to attack the underlying hydropic condition.

Vestibular nerve sectioning is offered to those patients who are shunt failures or to those who have persistent labyrinthine dysfunction from an infection or traumatic origin and still have serviceable hearing. One can approach the vestibular division of the eighth cranial nerve either by the middle cranial fossa or by the retrolabyrinthine route. In the first, the vestibular nerves are located at the lateral end of the internal auditory canal and severed when one is certain of the anatomy. In the second approach, the posterior fossa dura is incised behind the sac entering the cerebellopontine angle. At the brain stem, the unbranched eighth cranial nerve is identified in its constant anatomical relationship to the fifth, seventh, ninth and tenth cranial nerves. The rostral portion of the eighth nerve represents the vestibular division and can usually be dissected free from the cochlear division and divided. In both procedures, one must accept a five percent chance of meningitis and/or a CSF leak along with 3% to 5% chance of further hearing loss. A three to five day postsurgery hospitalization is required. The middle fossa approach appears to give the best results with a 95% chance of total alleviation of vertigo. The retrolabyrinthine approach is relatively new and good results in the 80% to 90% category are being reported. The discrepancy is thought to be due to the fact that not all of the vestibular division is sectioned due to the close approximation of it to the cochlear division. However, the retrolabyrinthine approach offers less brain retraction and a chance to explore the angle for tumors and compressing blood vessels. Active neurosurgical involvement is utilized.

Finally patients without serviceable hearing are offered either a transmastoid labyrinthectomy or a translabyrinthine eighth cranial nerve sectioning depending upon general medical risk factors. It is best to section the nerve proximal to scarpa's ganglion to obtain the best result. However, in those whom the risk of meningitis and CSF leak is too great, the former is the procedure of choice since the CSF space is not violated. Excellent results are obtained in 90% to 95% of the cases.

A brief description of the surgical treatment of balance problems is described. Patients who come to surgery can usually expect very good results. Morbidity from these procedures is quite low. Such procedures in the hands of the experienced neurotologic surgeon offer significant improvement in the quality of life for affected patients.

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Special Article

Rheumatology In China

Harry E. Thompson, M.D., F.A.C.P.

In September 1981, a group of rheumatologists* from medical centers throughout the United States and their spouses took a most interesting trip to China. The group was headed by Dr. Nathan Zvaifler, a brillant immunologis from California. The study tour was under the auspices of the People's Republic of China. Two Chinese-Englis speaking guides were assigned to us. Figure 1 shows the Great Wall of China at the highest point overlooking Peking. Figure 2 shows our itinerary, and Figure 3 shows a map of China marked with the route taken by our group.

The study tour began in the capital city of Peking (Beijing) with visits to medical schools, hospitals, communes, and wards. We then went south to Shanghai, Hangchow, Canton, and Hong Kong over a period of 16 days and a distance of about 2,000 miles. Lectures, discussions, and scientific interchanges were the general procedures.

There are some very interesting sidelights on China. Figure 4 shows part of the Forbidden City in the capital city of Peking. Security was no problem. There were no locked doors in hotels. At times, it was very embarrassing for the wife to find a male Chinese in the room while dressing. Crime, rape, and robbery are unknown. Abortion and birth control clinics were numerous since Chinese couples receive from the government a payment of about $35.00

From: 310 North Wilmot Road, Suite 209, Tucson, Arizona 85711. Presented in part at the meeting of the Medical Society of the United States and Mexico, Guanajuato, Gto., Mexico, November 1982.

*See Addendum

Figure 1
he Great Wall of China at the highest oint overlooking Peking. Pictured is Irs. Harry E. Thompson.

Figure 2
Itinerary

Peking	Capital Hospital July First Commune
Shanghai	Quan Hwa Hospital Institute for Medical Sciences Tiemsan Residential Area Clinics
Hangchow	Meeting Zhe Jiang Medical School and Hospital
Canton	Zhong Shan Medical School First Affiliated Hospital
Hong Kong	Vietnamese Refugee Center

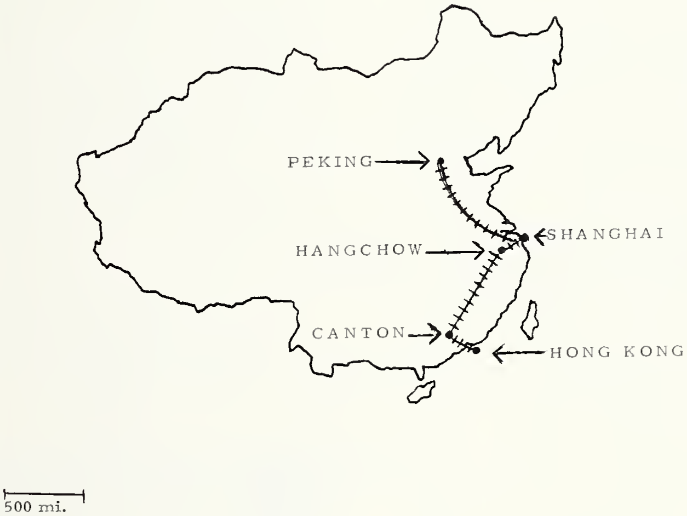

Figure 3
Map of the People's Republic of China showing route taken by study tour group.

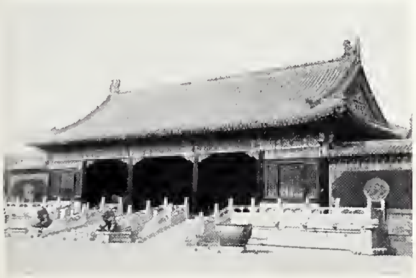

Figure 4
art of the Forbidden City, Capital City of eking.

Figure 5
Dr. Fong and Dr. Thompson on the steps of the Capital Hospital in Peking. Also pictured on the left, top to bottom, are Dr. James Farrell, Dr. Surry Roberts, the guide, and Dr Nathan Zvaifler.

per month for one child which is reduced if more than one child is sired. The minimum age for marriage is restricted to 23 for women and 28 for men.

Our first visit was to the Capital Hospital pictured in Figure 5. We were greeted by Dr. Chang, Vice-chairman of the Department of Medicine at the hospital and Dr. Fong, the Assistant Director of the hospital. We learned that all of the heads of departments were old since the cultural revolution closed all schools of art and science. Many of the doctors were women who were coming up in the school curriculum. Pictured in Figure 5 is the old hospital previously under the auspices of the Rockefeller Institute which was closed during the cultural revolution and reopened in 1979. There were 2,500 outpatient visits per day and 600 hospital beds primarily for specialty care. In the last two years, immunology, nephrology, and rheumnatology had been added. Ward rounds were made and one unusual case of Behcet's syndrome, characterized by oral and genital lesions, arthritis, and inflammatory bowel syndrome was seen. Although this is rare in the United States, it is common in the Orient. Three women with lupus, one having renal involvement treated with immunosuppressives and steroids, were seen. The general impression of our group was that steroids were probably given too frequently and aspirin could have been utilized. The Chinese do not employ aspirin because of, they say, excessive gastrointestinal irritation.

We visited the July First Commune in Peking. This was a rather bare hospital and clinic. Approximately thirty doctors were in attendance. About 200 patients are seen daily in the clinic which has rooms for gynecology, internal medicine, dental work, and one room for acupuncture. An acupuncture procedure, pictured in Figure 6, was observed here. Electrical stimulus was also added to acupunture, as seen in Figure 7. The hospital was somewhat grim. Mosquito netting hung above each of the four to eight beds in each ward (see Figure 8). The patients were fully clothed. Intravenous tubing was made of rubber.

The barefoot doctors were intriguing. Two women and one man were responsible for about 1,800 people. They see patients in their home and, if necessary, send them to the clinic or hospital. They utilize a very comprehensive medical book which covers everything from asthma to snake bite. They employ simple drugs such as penicillin and aminophylline, or traditional Chinese drugs, or both. If a disease requires special care, the

Figure 6
Acupuncture

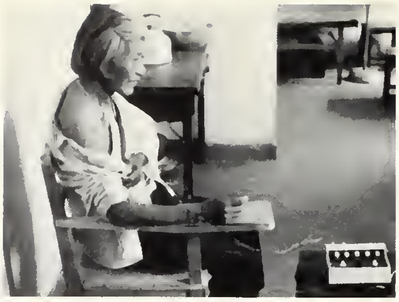

Figure 7
Acupuncture, modified by stimulating electrodes.

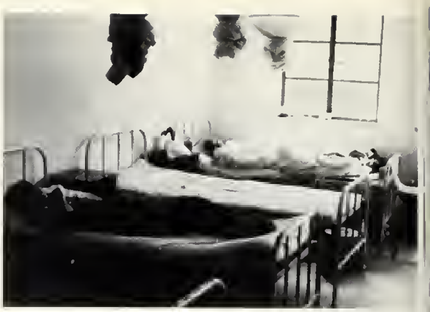

Figure 8
July First Commune Hospital. Not patients fully dressed and mosquit netting over the beds.

patients may go to provincial, municipal, or medical school facilities at a very low cost.

In Shanghai, the Quan Hwa Hospital was the only hospital that we visited which was not connected to a medical school or other hospital. Dr. Y. Tang, the innovator, is a dedicated and remarkable woman. Through her interest in rheumatoid arthritis, this installation was set up ten years ago and both the clinic and the hospital were limited to patients with rheumatoid arthritis. A conference with the orthopedic group there was informative. They presented 85 patients with rheumatoid arthritis with synovectomized knees with a follow-up of two years and 70% to 80% good results. They stressed early operation, complete removal of the synovae, and installation of thiotepa. Hip and elbow replacements were also done with 83% improvement. For wrists, only synovectomy and immobilization were employed. Dr. Cehen Shun Le, Vice-chairman of the Immunology Institute at the Second Shanghai Medical School, presented 100 cases of progressive systemic sclerosis (scleroderma) with essentially the same findings as in the United States. Several immunological studies were done. Colchicine and Penicillamine were given to a few patients.

At the Institute for Medical Sciences in Shanghai, a most impressive Dr. Chiang, who had been professor of the Second Medical College since 1940 and who was now the director of the Institute of Immunology, related the activities of that Institute. A large number of these included immunological tests and HLA typing which was done for all of China.

The Tiemsan residential commune in Shanghai consisted of 47,000 workers with ten clinics and two hospitals. One clinic which we visited demonstrated cupping (see Figure 9). A lighted waxed paper was inserted into a bamboo cup and then placed over a painful area. It was allowed to remain there for a few minutes. A Laser beam was also utilized.

In Hang Chow, group discussions with approximately 20 Chinese physicians affiliated with the Zhe Jiang Medical School were held. We then visited the Second Affiliated Hospital of this school. Dr. Yu indicated that the school was 70 years old with a five year curriculum. The 2,000 medical students will return to their own provinces because of the regional dialects. Hospital patients that were seen included one female with systemic lupus erythematosus with kidney involvement who had previously been treated with immunosuppressive therapy and was currently being treated with large doses of corticosteroids plus traditional medication. One male with scleroderma was seen as were two other patients with systemic lupus erythematosus who were receiving fairly large doses of prednisone.

At the Quan Zhou Academy of Sciences in Canton, a meeting with Chinese physicians headed by Professor Huang Bao Jun was held. Lectures were given here by Dr. Zvaifler and by me. My paper related forty years' experience in 2,000 patients with gold therapy either alone or with corticosteroids and a control group. The results are summarized in Table 1. Gold alone was administered to 1,170 patients. The percentage of improvement was as follows: Ten percent showed no improvement, 52% improved, and 38% went into remission. When gold was employed with corticosteroids in 1,445 patients, 12% showed no improvements, 64% improved, and 25% went into remission. Of 273 patients who were treated with neither gold or corticosteroids, 24% showed no improvement, 70% were improved, and only 6% went into remission. These patients were followed for five years. It is obvious that either gold alone or gold with corticosteroids gave a much higher complete remission percentage. Gold therapy for those patients not responding to conventional therapy is an effective and valuable treatment of rheumatoid arthritis.

The Chinese were interested in gold therapy, but they said that it was too expensive. Their drug supply house in Peking is responsible for the manufacture and distribution of drugs for all of China, but it is unable to prepare gold for treatment.

The Zhong Shan Medical College in Canton which we toured next is considered to be one of the best medical schools. It had a six year curriculum; three additional years for an M.A. degree and an M.D. degree after special training. An excellent library with modern textbooks and periodicals in all languages was available. We found McCarthy's recent text on arthritis from our country. The hospital here was devoted primarily to subspecialty care. It was felt that rheumatic heart disease and acute rheumatic fever was uncommon.

A visit to the Kaitak East Transit Center in Hong Kong finalized our study tour. There were approximately 2,800 people there awaiting transfer to

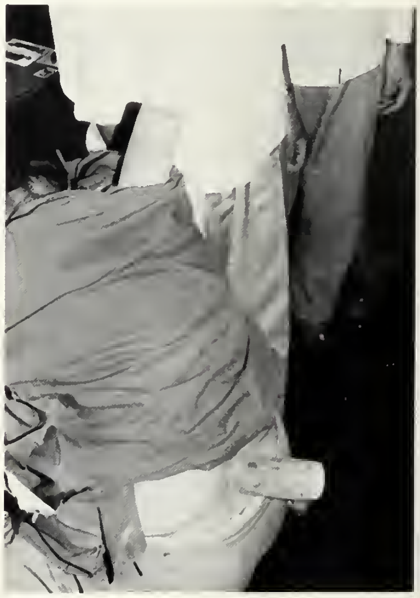

Figure 9
Cupping: A lighted paper placed in bamboo cup is applied to painful areas.

Table
Patients Treated with Gold Alone or with Gold and Corticosteroids

Agent	Num.	Percentage of Improvement		
		none	improved	remission
Gold only	1170	10	52	38
Gold and Corticosteroids	1445	12	64	24
No gold or steroids	273	24	20	6

her countries. Health care was rovided by a clinic at which about 100 itients were seen daily. Physicians orld-wide serve with two others—one om Hong Kong and one from Rotary ternational. The general health of the fugees was good, probably as a result previous screening on entry.

In conclusion, rheumatology is ceiving increasing attention in China. nmunological procedures, isolation, nd identification of clinically effective gredients in traditional drugs are eing researched. Hospitals, clinics, and atient units are antiquated. Arthridies, ich as gout and gonorrheal arthritis, e not seen. Rheumatoid arthritis, rogressive systemic sclerosis, and lupus opear to equal our incidence. reatment in general of rheumatoid thritis and lupus erythematosus is essentially similar to ours. Possibly the Chinese utilize corticosteroids more freely and in higher dosage levels. Aspirin is not utilized and gold is unobtainable.

Addendum

Members of the study group included:
Dr. Nathan J. Zvaifler, La Jolla, California
Dr. James B. Farrell, Albuquerque, New Mexico
Dr. Robert C. amd Dr. Joan Minsky Jacobs, Denver, Colorado
Dr. Allan L. Metzger, Los Angeles, California
Dr. Alfred Miller, San Antonio, Texas
Dr. Surry P. Roberts, Raleigh, North Caroline
Dr. Robert H. Shiomi, Portland, Oregon
Dr. George S. Stephens, Castro Valley, California
Dr. Harry E. Thompson, Tucson, Arizona

CONFLICTS in Medicine

I'D LIKE YOU TO SEE A SPECIALIST ...HERE ARE NAMES OF THREE GOOD ONES!
I ONLY WANT TO SEE THE BEST ONE IN TOWN!
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Why Have We Waited So Long?

Many forces advocate the need to take a new look at how we are delivering chronic care services to our older population. These forces include the rapid aging of our population and the maturation of the baby boom age cohort, the reduced size of families and family residences, the mobility of our younger population, the limits on public funds available to support this population and, not the least, the increased prevalence of chronic health problems among the aged. All of these forces have exacerbated the problem of allocating constrained resources for the care and support of needy groups in our society.

The changes in the composition of the older population are so dynamic that the Bureau of the Census only recently began to keep statistics on the 100+ age group because of their large numbers, and currently reports the presence of 32,000 people age 100+. The "senior seniors," or those over age 85, are among the fastest growing age group, increasing from 2.2 million in 1980 to 2.4 million in 1982. The anticipated presence of a large "senior senior" population should not come as a surprise to us. The 80, 90, and 100-year-olds of the very near future currently are living and can be counted.

Why have we waited so long to develop programs and policies to respond to the needs of the aged? Why did we wait so long that we must deal with the current problem as a crisis in long-term care? Several reasons can be offered in explanation.

1. We do not adequately plan to meet *any* future social and health care needs in our society but, instead, respond to crises as they emerge.
2. As we are not willing to allocate the financial resources necessary to deal with social and health problems, we do not face the problems, thereby forestalling a difficult allocation decision.
3. We do not believe in investing large sums of public money in the elderly, because this group is not considered productive.
4. There are so many social problems which require our attention that the needs of the very old are relegated to a nonpriority position.

While there may be truth in all of the reasons offered above, an additional reason, which should be acknowledged, is the absence of a knowledge base and experiences to help us understand how to deal with this new age group. Neither our society, nor other developed societies, has dealt with the problems of large numbers of people with chronic illness in a way that can provide a model.

Surprisingly, in 1979, the federal government exhibited great foresight in turning to a select group of universitite and their medical schools to help programs, policies, and approaches to enable us, as a nation, to meet this critical need. Using the university or the school of medicine as a focus for research was not new, but using the university to help solve a national problem was, in fact, a creative, bold step. The University of Arizona College of Medicine was one of nine centers designated nationwide as a long term care gerontology center. The long term care program at the Arizona Health Sciences Center focuses on education at the undergraduate and postgraduate levels and provides the base for statewide consultation and empiric research, leading toward solutions to the many problems so apparent in the aged. As a result, along with the eight other centers, we have begun to propose solutions to the problem of serving our older population in the local and national level.

The future productivity of these centers has recently been threatened by a decision to fund the centers for only a four-year period. The original intent was to support their evolution into a network of comprehensive centers, provided with the resources needed to have impact on the way in which we deal with the problems of the elderly. Four years of long term care gerontology center activities will provide noticeable changes in the University of Arizona and in the State, but it is too brief a period to generate the desired impact on this national problem. These long term care gerontology centers, properly funded and funded for a sufficient time, could rovide the turn-around required. But ur years of limited funding on the rt of nine centers will not provide a lution to the problem. If the centers e not continued, what new model ill be required? How long will it take organize the new approach, and ow long will it be funded? Can we, as society, afford the wasted time and oney when the needs of the elderly e pressing for solutions?

Why does it take us so long? The swer is complex, but we are now ommitted. The Arizona Health iences Center will work to provide e resources needed for its programs aging and will seek new resources to ontinue research into the national roblem of care for the elderly.

heodore H. Koff, Ed.D.
rector, Long Term Care
erontology Center

ouis J. Kettel, M.D.
ean, College of Medicine

arilyn Heins, M.D.
ce Dean, College of Medicine

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Briefly Noted

Cedric W. McClinton, M.D., Phoenix, has been selected interim chief of staff for Humana Hospital Desert Valley.

Paravasthu Ramanujam, M.D., Sun City, is the recipient of the Rowell Laboratories Education Committee Award. This prize is presented annually for the best paper on a proctologic subject submitted by a resident in colon and rectal surgery. His report, titled "Anorectal Abscess and Fistulae," was based on clinical examinations of the 1,023 patients at Cook County Hospital from January 1977 to June 1982. The award was presented at the 82nd annual meeting and exposition of the American Society of Colon and Rectal Surgeons, in Boston in June.

Jose Robledo, M.D., Casa Grande, was recently certified by the American Board of Otolaryngology.

Sydney E. Salmon, M.D., Tucson, Director of the University of Arizona Cancer Center since its founding in 1976, has been chosen President-elect of the American Society of Clinical Oncology.

Martin L. Shulz, M.D., Tucson, has been elected president of the medical staff at St. Mary's Hospital. He will serve a two year term.

Speakers at recent *Health Talks* cosponsored by the Arizona Medical Association and Blue Cross/Blue Shield of Arizona were **Mark E. Baldree, M.D.**, Phoenix, "The Ear" in April; **Mark A. Wyse, M.D.**, Phoenix, "Getting Ready for Summer" in May; and **Mervyn D. Willard, M.D.**, "Vitamins, Minerals, Which Ones and How Many?," June.

Physicians appearing on the "Health Highlights" cable television program cosponsored by the Arizona Medical Association and SamCor were: **George F. Brown, M.D.**, Glendale, discussing the medical aspects of desert survival, July, and **James E. Joy, M.D.**, Phoenix, and **Herbert L. Winogard, M.D.**, Phoenix, with information about readying a child for school, August.

The Arizona Medical Association welcomes the following new members:

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Johns Hopkins University
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Mark E. Baldree, M.D.

Walter W. Donahue, M.D.
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University of Louisville
School of Medicine—1949
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Medical College of Virginia—1963
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Austria—1967
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University of Illinois—1966
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No. 15, Sun City
Sri Venkatesvara University,
Kurnool, India-1975
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University of Oklahoma
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College of Medicine—1966
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University of Arizona
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University of Oregon
School of Medicine—1979
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Internal Medicine
2040 West Bethany Home Road, Phoenix
Temple University School of Medicine
Philadelphia, Pennsylvania—1975
Michael T. White, M.D.
Internal Medicine
1111 East McDowell Road, Phoenix
Albany Medical College of
Union University,
Albany, New York—1974

Navajo

Salvador T. Lee, Jr., M.D.
Family Practice
200 East Second Street, Winslow
University of the East
College of Medicine
Quezon, Philippines—1971

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Mark A. Wyse, M.D.

Pima

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Ophthalmology
5936 North Paseo Ventoso, Tucson
University of Chicago
Pritzker School of Medicine—1972
John A. Brim, M.D.
Psychiatry
2001 West Orange Grove,
Suite 402, Tucson
Washington University
School of Medicine,
St. Louis—1978
Ernesto R. Garcia, M.D.
Anesthesiology
1773 West St. Mary's Road, Tucson
University of Guadalajara,
Mexico—1954
Frederick Menick, M.D.
Plastic Surgery
5402 East Grant Road, Tucson
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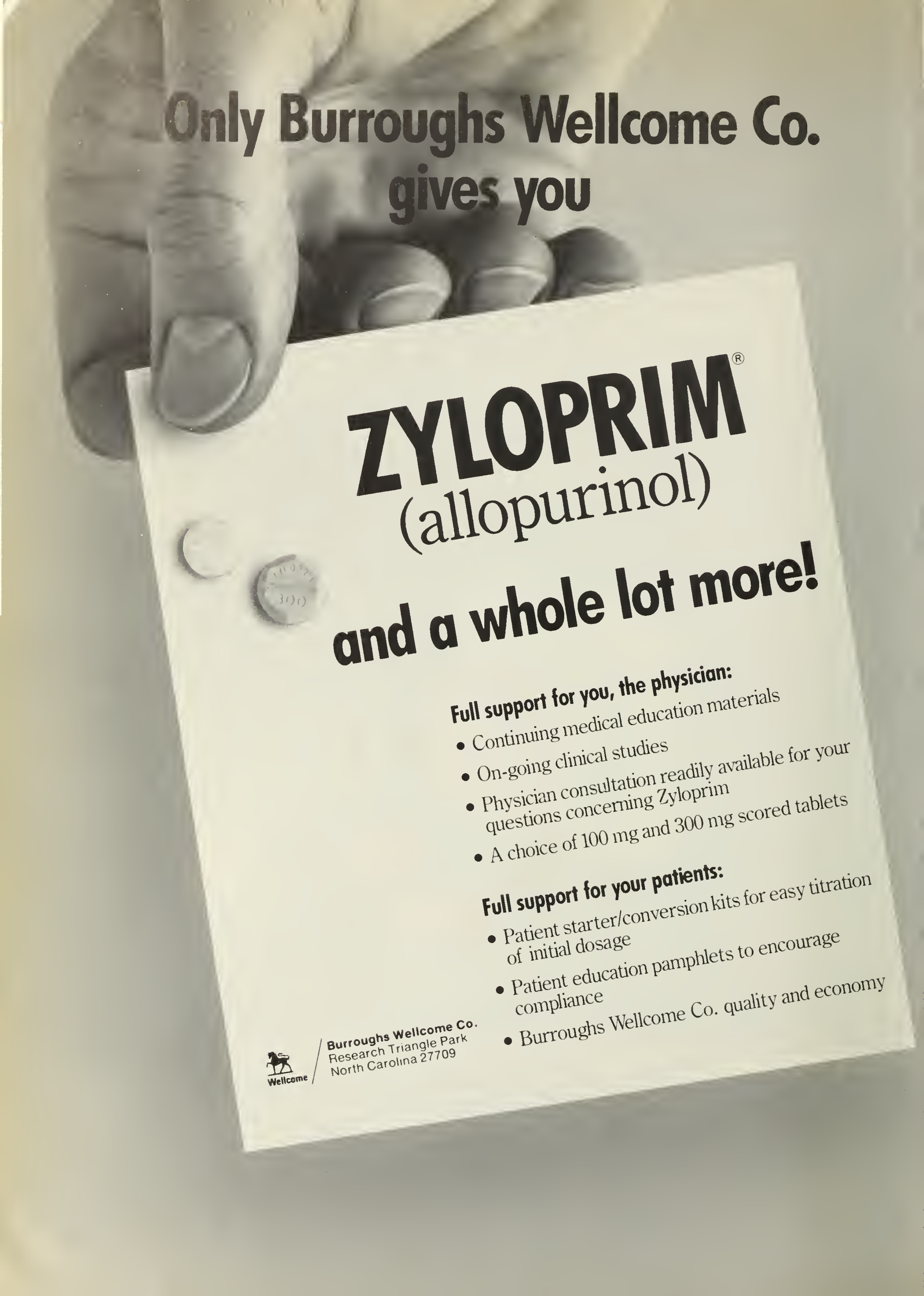
J-9043-4 July 1981



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Medical History

The California-Arizona Maneuver Area World War II

Some Medical and Nonmedical Notes About this Desert Training Center—1942-1944

Part 2

John W. Kennedy, M.D.

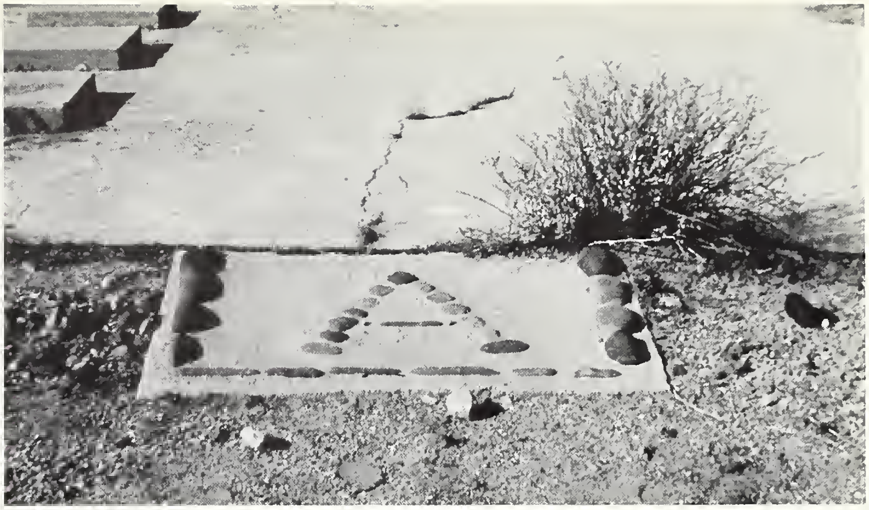

Figure 6
A mess kitchen site, Camp Hyder, Arizona, nearly 40 years later. Photo courtesy Lt. Col. Lynch.

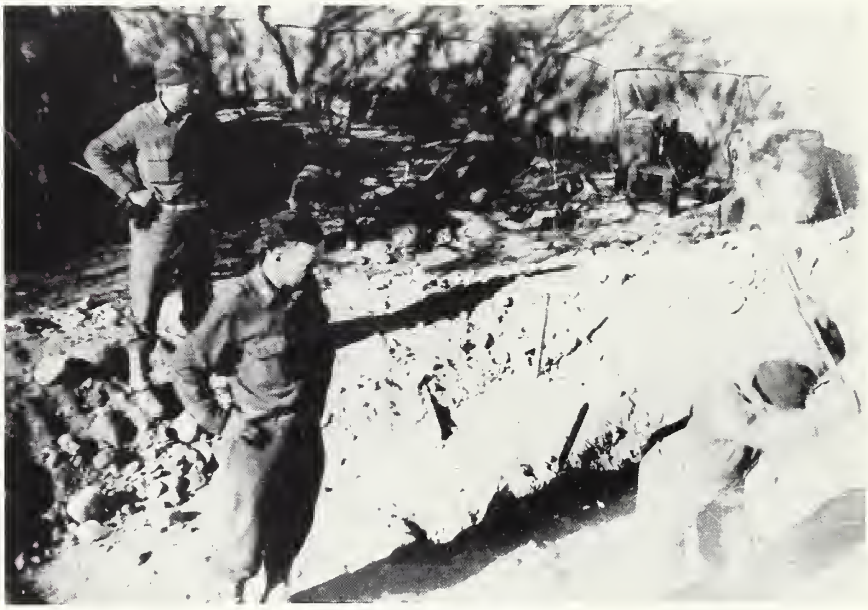

Figure 6A
80th. Division Medics "Digging In," Camp Laguna, Arizona 1943. Left to right: Maj. Charles E. Winston, D.C., Lt. Col. Harold J. Haleck, M.C., Division Surgeon, and an unidentified digger. Photo courtesy Dr. H. J. Haleck.

As late as 1981 a textbook on *Pediatric Infectious Diseases* by Feingin and Cherry states, "The most famous epidemic of post-vaccine hepatitis occurred among U.S. Military personnel in 1942. Anticipating that U.S. troops likely would be engaged in combat where yellow fever was endemic, a mass inoculation program was instituted early in World War II. Certain lots were stabilized with pooled human serum contaminated with hepatitis B. The contaminated lots gave rise to more than 28,000 recognized cases of icteric hepatitis, (yellow jaundice), two to six months later."

Obviuosly there were comments in the lay press and also in the medical literature raising the question whether this sort of mass vaccination at the time, with the present state of knowledge of the disease was justified. The threat of yellow fever was a definite threat, even in retrospect, the mass vaccination is believed by most authorities to have been justified.

You may be interested to know that there was published in *War Medicine* in 1944, a report concerning marijuana addiction in the Army. It reported 35 confirmed marijuana addicts who came under observation during a period of seven months at an Army Air Force Regional Station Hospital.[4] This may simply have been the early warning signal of the problem that the Armed Forces were to encounter years later.

Psychiatric and Neuropsychiatric Problems

There was a request from General McNair's headquarters in Washington concerning neuropsychiatric cases. General Haislip submitted a report covering the six divisions then in the desert, concerning their personnel and included those cases in hospitals and those cases carried as "absent sick." The results showed:

Those with psychoses, (definite signs of being insane); 139. Those with psycotic trends, 238; Mentally deficient cases (below normal intelligence), 454; Emotionally unstable (unable to adjust to field duty), 259. Total 1,130.

The DTC Surgeon stated that this total for six divisions appears to be about average and he did not feel that the desert was responsible for any unusual amount of mental trouble.[1]

Deleting the mentally and physically unfit from a division had its own problems and following is information sent to us by Dr. Harold J. Halleck who served as Division Surgeon of the 80th Infantry Division and was on the desert maneuvers in the winter of 1943. He quotes an annual report of the Medical Department in the 80th Division January 1 to December 31, 1944 and it reads in part, "While the division was on Tennessee maneuvers in 1943, 'limited service' as an entity was abolished . . . At the time, 200 enlisted 'limited service' men were members of the division. Action on clearing these men was deferred by higher headquarters until the division should reach a new station, but before action could be taken, the circular providing for such disposition was rescinded November 11, 1943."[5]

In C-AMA every effort was made to clear the physically unfit from the Division under the provisions of memorandum No. 33, December 16, 1943, separating under the provisions of War Department Circular No. 293, 1943. This action was continous and positive. Four hundred forty-nine cases were studied by the Division's Screening and Reassignment Board of which 383 cases were referred to C-AMA for action. Of the 383 cases, 213 were transferred to service units, 19 were remanded to the Division for retention and 151 were pending action of any kind by C-AMA. Persistent requests by the Division for action on these cases met with no success. (As one who served in a nondivision medical installation for the duration, it seemed to me that all of the unfit from any other outfit of the Army was reassigned to the medical units for retention.) You will note here that the report states, 213 were transferred to service units, such are the fortunes of war! Another experience related by Dr. Halleck is similar to that which was noted, not only in the official history but in the recollections of many of our correspondents who were on the desert. It goes somewhat as follows, "On one maneuver, all installations were to dig in. The Division Clearing Station with one ward tent was set up in a wash to lower the silhouette and had a few casualties on cots when a torrent of water came rushing down from a mountain rainstrom suddenly inundating the facility. No loss of life ensued. This occurred on the desert north of Yuma." (Figure 6). A similar devastating experience is related by the hospital personnel assigned to Camp Bouse, Arizona, which incidentally was a very secret installation. A station hospital with a complement of nurses and medical officers had been assigned to this camp. Here the nurses pyramidal tents were set up in a wash, or close by a wash, by some unsuspecting tenderfoot who didn't understand the vagaries of the desert. Well they had a similar occurrence with a flash flood and it took a couple of days to reassemble the nurses and their gear to higher ground. No casualties were reported. (Figure 7.)

Dependent Medical Care

This must have presented a real problem—as we are all aware of those times. Soldiers' families were bound to follow them, in spite of all directives to the contrary, if the troops remained in the states. On November 22, 1943, the Headquarters of the Communication Zone of the California-Arizona Maneuver Area notified the Commanding General of the Army Ground Forces that, "It was recommended that personnel of all units entering the C-AMA be advised that Military Medical Facilities are not available for treatment of dependents. Civilian sources for medical care are meager in large portions of the area—the limited service previously available to dependents at Torney General Hospital, Palm Springs will be discontinued." It was further noted, "That several incidents have occurred recently which involved unusual hardship and tragic results for the families of service personnel due to inadequate medical service." But the hard hearted Commanding General of the AGF, Army War College, Washington, D.C. disapproved this recommendation and a final letter states, "Facilities for limited medical service to dependents were resumed at Torney General Hospital, November 1943."

The Dust-Hazard for Vehicles

On July 7, 1943, there is a report from a Desert Warfare Board from the DTC at Camp Young, a report to the Commanding General of the Desert Training Center outlining a study of the dust conditions in the area. This survey was apparently stimulated because of

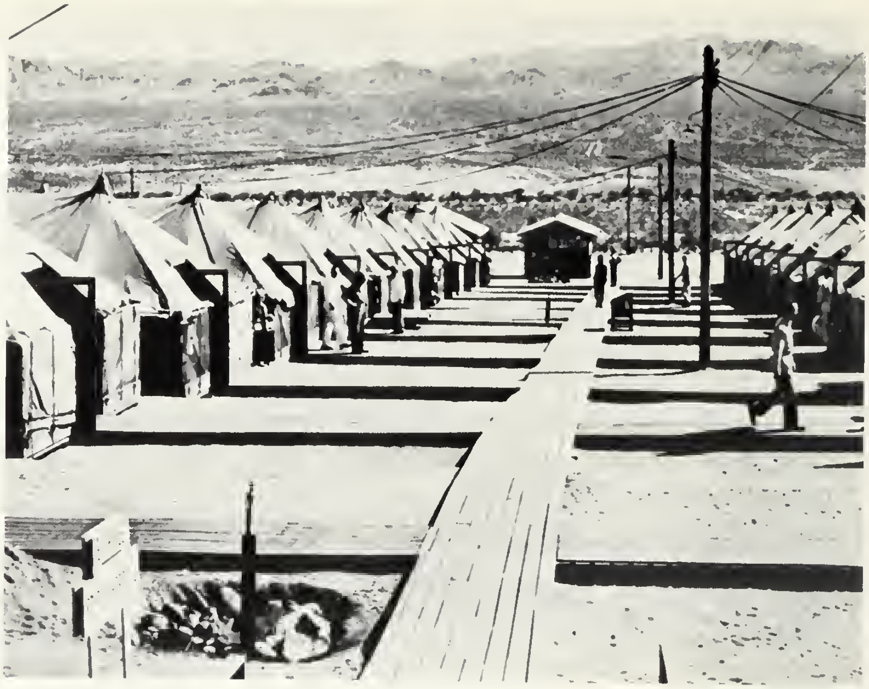

Figure 7
150 Station Hospital, Camp Bouse, Arizona, 1943, Maj. C. F. Mueller, commanding. U.S. Government photo.

Figure 8
The tanks came through while we were sleeping, notice bed made on the ground. Camp Granite, California. Photo courtesy of M. McKee, 90th Inf. Division.

Figure 9
The sand, the dust, the sand, Camp Granite, California. Photo courtesy M. McKee, 90th Inf. Division.

he excessive wear and tear that had occurred on vehicles used in the area. The valley floor was described as three general types. One type was mixed sand and gravel which packs with traffic and yields very little dust. Another type, loose, fine sand with more or less clay and this sediment varies from shifting dune sand which is pure fine grained to some stream deposit sand having a higher percent of loose clay. The third type, of boulder and clay beds, was known as desert pavement. It looks very firm but one vehicle will scatter it and plow deep tracks into the underlying clay. The gravel is not thick enough to provide traction in the clay. All 2 x 4 vehicles stick in the sand and 4 x 4 vehicles must use four-wheel-drive, low range to move through it. In dusty areas, vehicular wear and maintenance are excessive; servicing is impossible on windy days. (A map depicting these areas was not available in the printout which we received from the National Archives.) There was a general recommendation that no permanent or semipermanent installations be permitted in the heavily dusty areas. In certain areas only nonmechanized type units should be stationed and in such camps all roads should be graveled and vehicles should be rigidly restricted to the roads and these camps should be moved every three months. There were other areas designated for semipermanent installations and these would be for armored and mechanized units. The tracked vehicles would be restricted to a minimum number of roads in order to give the sand on other roads a chance to pack and sprinkling would help to facilitate this and should be tried wherever water supplies were adequate. They recommended that Camp Pilot Knob be moved to the vicinity of Ogilby and there should be some determination whether Camp Clipper should be moved to the southeast of the old Granite Mountain and Camp Ibis was to be moved north to the Nevada-California line. On the Arizona side, Camp Hyder and Camp Laguna were to be abandoned. None of this makes any mention of the prevalence of coccidoidomycosis among the troops in these areas but as we shall presently see some of these areas were found to be heavily endowed with the fungus. The widespread habitat of the lowly spore was to remain a secret—no more. (Figures 8, 9, and 10).

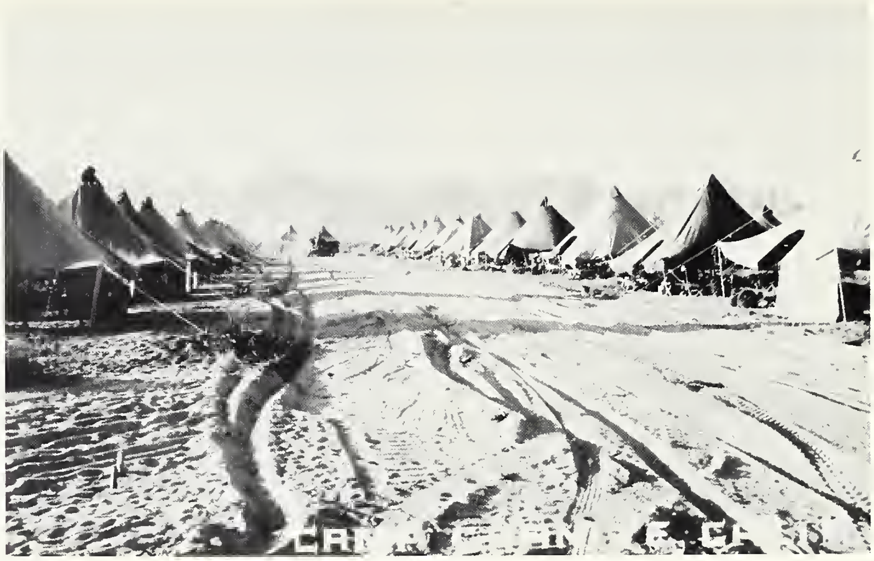

Figure 10
Camp Granite, California. Note the carefully sanded streets. U.S. Government Photo. Photo courtesy M. McKee, 90th Inf. Division.

Maneuvers in the San Joaquin Valley

As early as 1941, a policy was established placing the San Joaquin Valley, California, out of bounds as a location for camps and maneuvers. The Ground Forces did experience one epidemic of coccidioidomycosis as a price for violating the "No Trespassing" warning for the Valley. The 7th Motorized Division had maneuvered in the northwest corner of Kern County (Antelpoe Valley, an arm of the San Joaquin Valley) during June and July. An epidemic of severe respiratory illnesses ensued which was proved to be coccidioidal. "Seventy-five cases of clinical coccidioidomycosis were diagnosed; on the ratio of erythema nodosum to infection, it is estimated that there were between 300 and 400 infections. On August 18, 1942, Army Ground Forces endorsed the July sanitary report of the 7th Motorized Division and approved the recommendation it contained, "That the western portion of the San Joaquin Valley, south of Fresno, California and especially the portion lying in Kern County not again be used for maneuver or training area for Army personnel."[1] (Page 293).

The lowly spore could be ignored—no more.

California-Arizona Maneuver Area

Dr. Smith notes, "A serious problem developed in the California-Arizona Maneuver Area, the Desert Training Center, which was located in the desert areas of southwestern California and western Arizona. Coccidioidomycosis constituted the chief health hazard peculiar to this area, although this fact was not recognized during the early months of the war."[7]

"Recognition of the problem began in 1943." Representatives of the Desert Training Center discussed the possible hazard of coccidioidomycosis with Dr. Smith. Sample skin testing surveys were advised, and it was suggested that medical officers be alerted to the danger of this infection, particularly in the spectacular and easily recognized form of erythema nodosum. While this plan was under consideration the Desert Training Center received the following information from the 54th Station Hospital near Yuma, Arizona.

"We were out on grand maneuvers for three weeks returning to our base a week ago. Very suddenly we got a number of men with influenza like symptoms, and a bizarre lung finding, on physical and on x-ray. Today we have three positives out of five tests as well as an outbreak of 'Epidermothytid' (doubtless erythema multiforme) and erythema nodosum in these same patients. (One of these is a man from the Royal Dutch Army, who has been in this country only one month, three weeks of which were on the desert, and one week in the hospital."[7]

Subsequent serologic examination confirmed the epidemic as coccidioidomycosis. The site of the infections was especially located in an area near Pallen Pass, 20 miles west of Blythe, California. (Figures 11, 12). This was in the maneuver area where personnel received final polishing. The information was sent at once to the Surgeon General's office which immediately notified the Surgeon, Army Ground Forces, that a previously undetermined area was heavily infected with coccidioides. The Medical Officers of the C-AMA initiated a coccidioidomycosis control campaign and had a meeting at Stanford in the first week of May 1943. It was recommended 1) to educate the Medical Officers in the recognition of coccidioidomycosis and provide them with diagnostic facilities, and 2) to delimit endemic areas by epidemiological investigations including selected skin testing surveys and a continuous search for erythema nodosum. In August, the Commanding Office of the 7th Medical Laboratory visited Stanford to institute the necessary diagnostic facilities. However, the work had only begun when the 7th Medical Laboratory was succeeded by the 9th. (And this was the usual sad fate of the programs, about the time a unit or Medical Officers would become cognizant of the methods of detecting the disease and recognizing it, they would then be shipped out to another station and a new crowd would come in. Sometimes they took up the burden, sometimes they didn't.)

Apparently the Surgeon at the Desert Training Center Headquarters never made a systematic study of this disease. But one officer who did make his own type of survey concluded, "That in the Desert Training Center coccidioidomycosis was highly endemic in the Pallen Pass Maneuver Area and in the Southern Arizona strip from Yuma to Camp Hyder, whereas, it appears not to be endemic in much of the northern section of Arizona and California localities, including Pomona, San Bernardino, Camp Young and most of the area of the Imperial, Riverside and San Bernardino counties."[7]

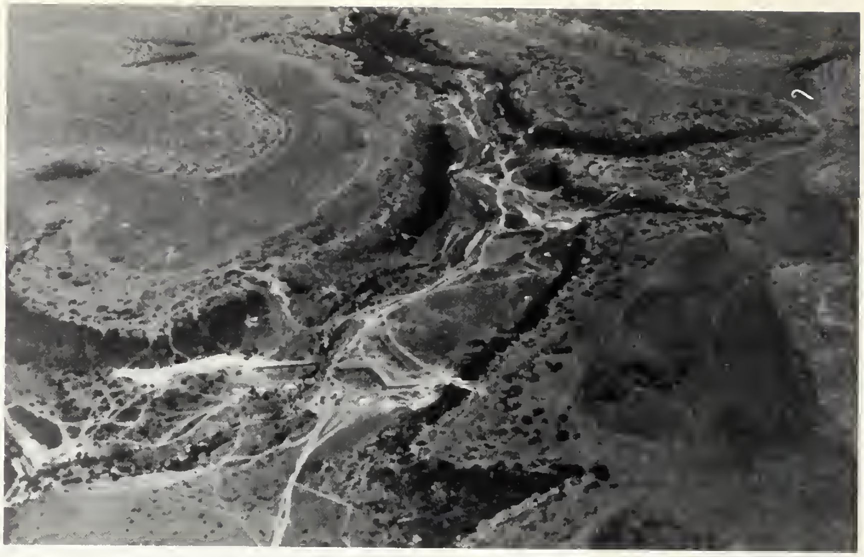

Figure 11
Aerial View—Palm Pass, California, 1943.

Figure 12
From Camp Coxcomb, California. Looking east towards Palen Pass, 1982. Photo by author.

The history of coccidioidomycosis in the 77th Infantry Division, which was at Camp Hyder Arizona from April 1 to October 4, 1943 is dismal. "Infections in personnel from this division were reported from Indiantown Gap, Military Reservation, Pennsylvania, Camp Pickett, Virginia and 219th, General Hospital on Oahu, Territory of Hawaii. The monthly statistical report of the division for September 1943 refers to an outbreak of 106 cases of epidemic pleurodynia, all of which occurred at Camp Hyder, while even in 1944 roentgenograms of the personnel in the Central Pacific revealed 80 suspicious cases of which 20 were established as coccidioidal in etiology."[7] This then is an example of the usual history of a unit which trained in a highly infectious or contaminated area and then was transferred to overseas stations or to other areas in the United States. Dr. Smith also noted that there was more recognition of the disease in distant camps, posts, and stations when Medical Officers who had been trained in the Desert Maneuver Area to recognize the disease, were transferred through the system to other stations. Here I would make a personal note. After VE Day in the European Theater, where I had been assigned as a radiologist to an evacuation hospital and also as consultant in radiology to Patton's Third U. S. Army, I was assigned back to London to the Royal Army Medical School. This was a great experience because the four of us who were so assigned were sent to various London clinics and hospitals as guests of the staffs and were certainly received with great cordiality for which the British are noted. On one occasion we were told to report to Lord Moran's service, Churchill's physician, where he would make rounds on a certain morning. We were welcomed with the usual introductions and the second patient which he demonstrated, he made the disclaimer "You Amerikans," that is the way it sounded anyway, "You Amerikans will recognize this disease for it is very common in your country." It turned out this was a Venezuelan seaman who had a chest lesion, a thin walled cavity. None of the four radiologists, and we had all been trained on the eastern seaboard, none of us recognized the disease. Much to our dismay we were informed that, "This was known in the United States as the San Joaquin Valley fever."

An excellent memorandum reviewing the coccidioidomycosis problem was prepared for the Surgeon General and a Captain Phillip E. Sartwell of the Division of Epidemiology visited the Surgeon Army Ground Forces in an attempt to improve the control measures in the California-Arizona Maneuver Area. Before any realistic measures could be taken, however, the Maneuver Area began to disband, so the problem ceased to exist. Dr. Smith concludes this portion of the report by tating that, "Perhaps the policy of irtually ignoring the problem of occidioidomycosis was wise. However, f there should be a future need for eestablishing such a training program nd if advantages of climate and terrain lo not outweigh the hazards of occidioidomycosis, the highly endemic outhern rim and central portion of rizona and the Pallen Pass area of alifornia as well as the southern and vestern San Joaquin Valley should be voided."[1]

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Decade of the 80's What Can Physicians Expect?

Merlin K. DuVal, M.D.

Merlin K. DuVal, M.D., addressed Arizona Medical Association's House of Delegates on May 21, 1983 and received a standing ovation. A written version of his speech follows.

Dr. DuVal, "Monte" to his many friends, is one of Arizona's most distinguished physicians, having served as Founding Dean of the University of Arizona College of Medicine from 1946-1971, as well as Acting Dean at a later time. He has served as Assistant Secretary for Health, U.S. Department of Health, Education and Welfare, for two years, as President of the National Center for Health Education from 1979-1982, and currently is President and Chief Executive Officer of Associated Hospital Systems, based in Phoenix. His list of recognitions, publications, and professional and community activities, is impressive.

When your President, Pete Robles, asked me if I would be willing to speak to this particular audience, my reaction was one of pure joy. It is a rare treat to be asked to revisit one's old friends and this occasion provides me with just that opportunity. Of course, the circumstances that bring me before you today are substantially different than those of earlier years when I petitioned you on a different topic. Instead, I will attempt to fill the prescription that Pete and Bruce Robinson requested, which is to say that I will do my best to address what I see ahead with respect to medicine in the 1980's. I'm never confident about looking into a crystal ball; indeed, I approach that task with the same trepidation I felt when I saw a sign in front of a building in Southern California the other day that said, "The annual meeting of clairvoyants has been canceled due to unforeseen circumstances." Worse, all of us know the legend of the king who was so distressed by the news that he shot the messenger. This impels me to ask that you be gracious and let me depart when I'm through because I suspect you won't care for the message. On the other hand, I can't fulfill the prescription without telling you the truth as I see it.

As a point of departure, I'd like to observe that you and I are members of a very remarkable profession. Even today, we still decide which of our young people are going to study medicine and what to teach them. We do the research that provides the knowledge that becomes their set of tools. We determine who will graduate, who will be licensed, who will serve what types of residencies and whether they will be certified. We determine whether they will be on our hospital staffs or members of our association. As individuals, we are still privileged to choose where we wish to practice, what kind of practice we will engage in, who we will serve, how we will limit our practice, and what we will charge. While this does not exhaust the description, these observations do serve to remind us that we remain a truly self-determining and self-regulating profession. Further, the physician remains essentially unchallenged as the captain of the health care team and, among the general public (in spite of its great concerns about certain aspects of what we are doing in the health care industry), the physician remains the single most trusted individual of all professionals. And finally, we retain for ourselves the privilege of creating our own organizations for the purpose of coming to grips with the problems of delivering health care to our American society in the best way possible.

I would submit that this adds up to an impressive and powerful list of attributes characterizing our profession. But we also have partners. These include academic institutions, hospitals, nursing homes, pharmaceutical and instrument manufacturers, and insurers. Together, we make up an aggregation of interests that has been called a medical-industrial complex—albeit of a very loose and fragmented nature. Each part of this complex is heavily dependent on the other and yet each is wholly independent from the others. Together, we make a remarkable partnership.

Economists have observed that our industry constitutes a "Wall Street Dream." We probably have no parallel on the American scene. Accounting for a gross annual expenditure in excess of $300 billion, serving as the nation's second largest employer, accounting for ten percent of the gross national product, and with a growth rate of approximately 15% a year, Standard and Poor could only give us a AAA rating.

In spite of this success story, our profession is under incredible assault. A couple of days ago, when I was in Washington doing some other business, I had an opportunity to spend an hour and a half with a very powerful Senator who, incidentially, has been a great friend of American medicine. During the course of our conversation, he reminded me that the words doctor and hospital are dirty words in Washington. My reaction, as I suspect yours might have been, was to become defensive because I'm convinced that we are trying to do the very best that we can. I mention this incident because this Senator's observation is fairly typical and is representative of much public thinking about us.

Flying home on the plane, I began to think back through contemporary history to see if I could ferret out some of the reasons we find ourselves in this difficulty. I recall, for instance, the middle years of the Eisenhower Administration when, on the occasion of the first White House Conference on Aging, we first articulated the social aspiration that access to quality health care should be a right for all of our citizens. I thought back to the incredible decade of the 1960's when we undertook a major effort to translate that aspiration into public policy by taking two, very large steps: eliminating the financial barriers to those who didn't have access through Medicare and Medicaid, and enlarging the capacity of the health care system in order to meet the anticipated demand. At no point in our history have we ever made such an investment. We created new health professional schools representing all eight major health professionals, markedly increased our investment in research, created regional medical programs to bring that research to the practicing physician as promptly as possible, developed neighborhood health centers, alcohol treatment centers, emergency medical centers and community mental health centers to get our services as close to the people as possible, and finally added comprehensive health planning to rationalize these efforts.

As a profession, I would submit that medicine reacted very responsibly to this federal initiative. We expanded our physical plant, produced new personnel and new knowledge. We moved rapidly to eliminate the existing two-tiered system of medical care into a single class and ended up delivering, in my judgment, the most advanced medical care in the world. As described earlier, we became a truly remarkable industry in the United States.

When examined from the viewpoint of the Senator's comments, however, we have to recognize that we are still consuming ten percent of the gross national product and that these resources are needed elsewhere. (When one considers that approximately 40% of this bill is being paid by the government, it is apparent why the government has so much leverage on our professional lives.) Worse, we have reached the point of diminishing returns such that, in spite of these extraordinary expenditures, our major gains are, today, being made at the margin and at an increasing cost. And cost is, today, the name of the game and concerns about it are driving the machine.

What are the principal reasons that we seem unable to contain our costs? First, and to me that most obvious, is that all people who are concerned about costs, and who speak about costs, are healthy. This is not said in jest. When one is sick, one wants the best and doesn't shop for the lowest price at that moment. Second, there's also no question but that demography has changed drastically and dramatically, with a substantially increased number of persons over the age of 65 using our services and, as you know are our most expensive users. (Hospital discharges increased between 1965 and 1978 by 8.5% per 1,000 but, for those who are over 65, they increased 45%.) Third, the intensity of care, and the intensity of the use of our system, changed dramatically in that same era because of decreased length of stay and increased technology and advanced medical capabilities.

Fourth, for years our payment system has been on the basis of cost reimbursement after the fact. That is to say, you make a professional decision, someone else carries it out, and a third party pays for it. That third party simply raises the premiums during the following year and the patient, or other purchaser, pays the new premium that year. This has been referred to as "cost pass-through" because there is no check, or stop, in the system and no one is at risk. This, of course, is expansionism.

Fifth, our patients are literally immunized against price. They have uncommonly low co-insurance and sometimes no deductibles. My own medical plan includes a $100 deductible but, after I have paid that, everything else is free. Clearly, this heightens demand on our system. Its origin is in union activity that took advantage of existing laws by pushing health care plans as totally tax-free expenditures, both by the employer and as tax-free income to the employee.

Finally, our federal government made the situation worse by identifying large groups of federal beneficiaries and by describing the benefit package for which they should be eligible. They then refused to foot the bill. Now that the Hospital Insurance Trust Fund is going to go bankrupt in 1988, serious attention will have to be directed to this problem. In the meantime, however, unable to pay its bills, the government has asked us to solve the problem by subsidizing Medicare. We have done this by shifting the loss to our charge-paying patients. Medicare is paying approximately 85 cents for a dollar's worth of service, and Medicaid is paying approximately 65 to 70 cents for a dollar's worth of services. We've had to make up that loss some other way.

I've asked myself, just as I suppose you have too, can't we isolate each of these cost-impacting factors one by one and treat them? As a practical matter, this has already been tried and has failed dismally. The history of regulation in the United States has been hopelessly inadequate in terms of cost control. Instead, it is proposed that a more appropriate answer to our dilemma is to move medicine into the marketplace as rapidly as we can. Further, it would seem that this has not only started to occur but has already occurred to a very considerable extent. In fact, the degree of change in medicine is so great that I am inclined to equate it with that period in the 19th century when science ultimately displaced witchcraft, religion and empiricism from medicine. It is that radical.

Consider, for just a few moments, some of the evidence at backs up this point. Within the last three or four years e FTC challenged medicine for its control of the Blues, ccused the Liaison Committee on Medical Education hich accredits all our medical schools jointly between the AMC and AMA) of operating in restraint of trade, found at Relative Value Scales constitute a form of antitrust, and sisted that physicians be allowed to advertise.

Consider, further, that as a consequence of the Health rofessions Educational Assistance Act of 1963, and the ubsequent Health Manpower Acts, that one-third of the hysicians who will be practicing at your side in 1990 (only even years from today) are already in the pipeline being ained and that we will have at least one-third to one-half gain as many total physicians practicing at that time as we o today. If you don't think these aren't harbingers of edicine entering the marketplace, and aren't prepared for s implications, then I would submit you are in for a onsiderable surprise.

Let's look for a moment at what's happened to the surance industry as a result of the cost-shift I mentioned a oment ago. Some insurance companies have discontinued riting health insurance and have marketed only their laims processing capabilities instead. Others, interestingly nough, have gone into the providing business by urchasing HMO's. We have examples of that here in rizona. Some are now taking an additional step by ecoming brokers through the establishment of Preferred rovider Organizations. These are radial changes for the surance industry.

Meanwhile, that segment of our society with the biggest mpact on you and me is business; i.e., employers who pay e premiums on behalf of their employees. As a group, ey are seriously upset about facing an expenditure that is ot only one of the largest items in their budgets but is also e least controllable. They are now trying to identify ways o control these expenditures and have started the move to evelop local businesss coalitions. We have them here in rizona and there are at least 100 elsewhere in the nation. ou can expect that their impact is going to become so reat that, as they enter the marketplace and decide to urchase care on a low-bid basis, we literally won't know hat hit us.

This is what I meant when I said that there was evidence hat medicine is already headed well into the open marketplace. This doesn't mean that we have not nticipated these changes, nor that we haven't begun to espond. Hospitals, for instance, have taken advantage of he shifting dynamics in very imaginative ways. When you onsider, for example, that cost shift amounted to $6 billion ast year, it must be obvious that if one could set up a ospital that treated only charge-paying patients, and voided Medicaid patients, it would have to make money. That is what proprietary hospitals found and, as a onsequence, almost one-third of all beds in the United tates are today owned by proprietary or investor-owned ospitals. Together, they make up the single most dominant orce for change within the health care industry.

Personally, I am a strong believer in the profit incentive, although I do not hesitate to say that I have reservations as o whether or not it is appropriate to own and operate a ystem that pays a "blind" investor (with no particular nterest in health) at the level of 15% to 25% earnings on omeone else's illness through a proprietary chain. My anxiety derives from the fact that, as these hospitals take more charge-paying patients away from your nonprofit ospitals, the ratio of public paying patients in your onprofit hospitals will rise and, as a consequence, utbacks in service, expansion, equipment and renovation, are inevitable. As one way of protecting themselves, nonprofit hospitals may, one of these days, ask you to take your choice as to which hospitals you wish to serve as members of a medical staff and, if you select your local proprietary hospital, you may be excluded from service on the nonprofit hospital staff. It's possible.

Of course, not-for-profit hospitals have also taken major steps in order to survive. First, they began to restructure corporately in order to protect their revenues from both the IRS and from being used to offset Medicare reimbursements. Perhaps you don't know it but if your local nonprofit hospital goes before the public and tries to raise money to support something or other it wishes to do, the contributions are subtracted from Medicare reimbursement. In other words, it's a reverse bootstrap operation. The second step nonprofit hospitals have taken is to develop systems in order to take advantage of economics of scale. Two hospitals a few blocks apart don't need two laundries. Similarly, they don't both need biomedical engineering departments, new equipment assessment, architects and engineering services, administrative services, etc. This is what systems are all about.

Physicians have also seen the light with respect to the arrival of the marketplace. Many have redistributed themselves geographically, and some have broadened the character of their practice in order to protect their incomes in the face of increasing competition. Many are looking for new ways to associate with each other, whether it be through prepaid group practices, HMO's, IPA's or PPO's. Others are taking salaried positions. By way of fighting back, some physicians are taking services out of the hospital, such as radiology, pathology, clinical laboratories, etc. Emergency centers, ambulatory surgical centers, first aid centers, etc. are all examples of this. Indeed, I can visualize hospitals in the future that have neither radiology nor clinical laboratories because they will be operated by physicians down the street.

I guess what I'm saying is that this adds up to a new ballgame and we are only in the first inning. Perhaps the most serious change has just occurred with the adoption, federally, of Diagnostic Related Groups as a system for compensating hospitals. In conversations I have had with physicians, I am impressed that there remain a large number who apparently don't understand what DRG's really are. And while time and circumstances are not appropriately spent on that topic this morning, let me quickly summarize by showing you roughly how they will work.

If we spent $40 billion on Medicare patients last year, and 20 million Medicare patients availed themselves of this service, this means we spent $2,000 on each person. Each of 467 diagnoses is "weighed" for relative complexity. If, for instance, the diagnosis of brain tumor is weighted at 3.6, then 3.6 times $2,000 is the total amount of money the hospital is allowed to receive for caring for every patient who underwent a craniotomy for a brain tumor irrespective of the actual dollars spent on the patient. Now this can be a good management tool but it's not a good tool for financing. As each year progresses, your hospital will have developed a profile of the diagnoses that you have admitted, and of the extent to which you order more tests or treatments than the DRG price permits. If you are a constant over-runner of a DRG category, you can probably expect to lose your privileges at that hospital or, in the alternate, the hospital could get imaginative and send you the bill for the difference. Any way you want to look at it, that's quite a new ball game because the hospital is now being held hostage for the decisions that you will be making.

During the same visit to Washington to which I referred earlier, I asked one of our elected officials why they picked on hospitals and held them hostages for decisions that were made by physicians? His answer was quick and very forthright. The hospital industry, for practical purposes, represents only three views: those of the public hospitals, voluntary not-for-profits, and proprietaries. Furthermore, there are only about 6,000 of them. That's an easier political target than 300,000 physicians and the American Medical Association! Obviously, your turn comes next. And because there will be half again as many physicians as we need, you can see that getting hospital privileges will get tougher and tougher, especially if you overrun your DRG's.

The tragedy of all of this is that it could lead to an adversarial relationship between you and your hospital. I say tragic because there are few marriages that are more dreamlike than that between a physician and a hospital, in spite of their petty squabbles. Each of you absolutely needs the other and, if you were to get into a contest, the power struggle could be very great. It's my judgment that, in any such contest, you are more powerful than the hospital and could win. On the other hand, if you go to war as a result of an increasingly adversarial relationship, even if you do prevail, I would ask you to ask yourself whether or not the price for your victory was worth it.

It was never my intention to leave you with an admonition or suggestions with respect to the topic I have addressed today. I would only submit that the opportunity for you to recognize what is coming, and to begin to work with the hospitals of your choice to meet these situations head on is in your best interests. An adversarial contest is not. This is no time for a major fight. Stated differently, you and I have practiced medicine during an era of progressively expanding resources. This meant that a decision to go in any specific direction did not necessarily impact on someone else's opportunity to go in another direction. This is what has changed. The total resource pie for the health care industry is now becoming fixed. The military people call this situation a "zero-sum game" because it means that a decision in favor of one will instantly mean taking something else away from another. That's what's different about your future and that is the nature of the change that is occurring in medicine today.

I know it's not cheerful. Therefore, in concluding, I ask you once again "please don't shoot the messenger."

Thank you very much for permitting me to be with you today.

Three Presidents' Views

Who's Your Doctor

William Y. Rial, M.D.

Immediate Past President
of the American Medical Association

The above speeches were presented at the 1983 Annual Meeting of the American Medical Association—We commend them to you.

Dr. Rial—**Who's Your Doctor**

It is with feelings of both sadness and joy that I come before you for my final report as President of the American Medical Association. Sadness, because this marks the end o my year in the highest elective office to which any of us can aspire in our profession, and because I will no longer have the privilege that I have had for the past twelve months of representing the Association, its House, and our colleagues across the country as your spokesman.

But there is great joy for having had that privilege. I have tried to bring more understanding to this nation of the goals and the achievements of the medical profession. It has been an extremely stimulating and satisfying experience. I have enjoyed it thoroughly, because it gave me an unparalleled opportunity to represent throughout this nation a profession that I respect and admire because of what it has done, what it is doing and what I know it will do in the future. And not incidentally, representing a profession that I love and which I chose as my life's work.

During the past year, you have honored us as your ambassadors to 37 cities, 28 states and 6 foreign countries. Constance and I have loved every minute of it; from some unplanned and hectic times to the sophistication of dinner with President and Mrs. Reagan and Her Majesty Queen Elizabeth and His Royal Highness Prince Philip. We would willingly continue but the calendar says only three more days, and there comes a time when one must say goodbye to the past and hello to the future.

Being your President has been a great honor. In fact, it is the third greatest honor that has come to me. The second was when Constance agreed to sacrifice an orderly and tranquil family life for the dubious privilege of marrying a physician. The greatest honor was symbolically bestowed on me when my former mayor, Mr. Edmund Jones, said to this House: "Take care of Dr. Rial so that he may return to Swarthmore and take care of us."

That's what being in this profession is all about. And that's why I assure you with all sincerity and good will that when I am no longer your President, when the mantle of office passes to the able shoulders of Frank Jirka Wednesday evening, I am not leaving my chosen place. I

Traveling New Streets: A Compact with the People

Frank J. Jirka, Jr., M.D.

President of the American Medical Association

American Medicine is the Best in the World Because It Has Remained Private

Ronald Reagan, President

United States of America

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am returning to my chosen place—as a practicing physician.

Today, I'm going to talk about physicians and their patients. If we are to continue to succeed as a profession, our success can only grow from an approach to patients that emphasizes the patient/physician relationship that has been so treasured through the years. It is an approach that is epitomized by one familiar word: Family.

I like the fact that in Pittsburgh, at Three Rivers Stadium above the dugout of the "Pittsburgh Pirates" appears the word "Family" instead of the usual "Home Team." In today's society, one of the few remaining stable elements is the family. An outstanding example of family and what it means is the British royal family. The Queen and her husband as well as the Prince of Wales, Princess Diana and the heir apparent, Prince William are more than just a collection of relatives. They are not ridiculed or reviled by cartoonists or editorial comment not just because they remain aloof from politics but because they represent their nation, its history and its honored traditions as nothing else does.

My message today is about family: Our family—the family of medicine—The American Medical Association and the people of this nation we serve. We see clearly the truth in the late Anwar Sadat's statement: "There can be hope, only for a society which acts as one big family and not as many separate ones." Fortunately for the familial relationship between patients and physicians, public opinion continues to show that the vast majority of people are satisfied with the quality of medical care they receive and satisfied with the way they are treated by us and our staffs.

I have a nagging feeling, however, that disturbs me. It is that the attitude toward us has begun to change and will change more dramatically if we do not respond. The biggest challenge facing all of us today is figuring out how we can restore some of the magic of personal care, some of the "family" feeling of medical care charisma, if you will, to our practices, yet, continue to be the technicians, the "super doctors" that society expects us to be.

Paradoxically, most of the proposals being made to bring more cost-effectiveness, more efficiency, more productivity to medical and health care appear to threaten the traditional patient/physician relationship.

This relationship is important, not just because it is traditional and expected but because it is based on the intangibles of trust and confidence and on the tangibles of knowledge of the patient's history and understanding of the patient's apprehensions. All of you realize the advantages of treating a patient you know and who knows and trusts you. Someone you have seen before and helped before. Someone about whom you know a great deal regarding personality, fears, expectations and even family life and job stresses.

I question how well that kind of relationship can be built and maintained in a storefront urgent care center, free-standing surgicenter, or other kind of walk-in medical office or clinic. It won't be impossible but it will be difficult. For the most part, I think such centers will get "drop-by-once" kinds of business. They will serve the person who has no personal physician. And it will be less than likely that the centers will be able to become personal physician to their patients.

Overall, I foresee an era to a great extent of strangers treating strangers and never seeing each other again. Maybe that's satisfactory. Maybe the patient/physician relationship has outlived its usefulness in a modern world where everything is prepackaged, frozen or "microwaved." I think not.

If the sole, or principal objective of medical care is to focus technically excellent care on the problem of the moment, does that assure the patient compassion or comfort or stable, comprehensive and continuing care? Or is it more likely that it results in a technically good service performed in a business-like and efficient manner and nothing more?

On this subject, I have said several times lately, in talks to medical groups and other audiences, that if a young man or woman completed medical training and wanted to know where to set up practice to make a lot of money, my best advice would be for them to rent space in the middle of the biggest shopping mall they can find. That way, people could make a single trip to buy plastic garbage bags, get their kids new shoes, and get somebody to look at dad's earache. I seriously question whether it would build a satisfying practice. Satisfaction for young physicians whether in primary care or in specialty care still comes from knowing their patients and building the kind of long-term relationship with them that leads to trust, understanding and confidence on both sides.

There are other indications that quality of care may be sacrificed to cost, efficiency, and to the productivity of the people providing it. In a few years, we may find that prospective payment for hospital cases is well-entrenched. Originally, it was for Medicare patients. Before too long, it may extend to all hospital patients and perhaps to all care in all locations by the government and by all third-party payors including patients themselves.

What happens then? Does the conversation with a patient begin: "What seems to be the problem?" Or does it begin: "Let's see now, what is the maximum I can do for you under your company's insurance program?" Physicians, nurses and others have been criticized in the past, although mostly in a joking manner, for referring to hospital patients by their infirmity rather than by their names. We are said to refer to the broken leg in 34-A or the gall bladder in 36-B. That's true, but it has no serious meaning to care. Will we now begin to talk about the eight-hundred-dollar maximum in 34-A or the sixteen-hundred-dollar, five-day length of stay down in 36-B?

It is assumed in current literature and in many speeches made by physicians, hospital administrators and others that the coming of prospective payment, among other things, will change patterns of medical practice. All of us freely admit that physicians must realize that their patient care patterns have an important effect on hospital financing and that medical staff must cooperate with hospital management to make sure the hospital not only survives, but prospers under new payment systems that are already visible and others that are certain to appears.

But does that mean the physician is to do less for a patient than the patient needs? Must new practice patterns also mean not only less care but perhaps insufficient care? Surely not. The pressures are going to be there for fewer tests, for less surgery and certainly for getting the patient out of the hospital just as soon as possible.

My friends and colleagues, if my year as President of this Association and all of my years as a practicing physician and yeoman in organized medicine are to mean anything, let it be summed up in this one statement: This is where we draw the line.

In the medical profession, we face many challenges and problems in the years ahead. This session of the House and many to follow will be devoted to considering them, debating them and finding solutions for them. And working out ways to accommodate some of them. One way or another, we will learn to live with DRGs and PPOs and PROs and JCAH and FTC and all of the other things about which we are so concerned. We will protect our profession and the patients we serve by being aggressive in our efforts to expose without hesitation those among us who practice professional exploitation. To help with that, I think we should reinstate our grievance committees at the county society level because the principal complaints about our colleagues are fee complaints. To avoid anti-trust implications, we need to involve a significant number of lay people who are respected, responsible local citizens and give the lie to the alleged "conspiracy of silence."

As a family, we cannot stand the divisiveness of turf disputes. If we permit them, people will become confused as to "who's my doctor" and turn elsewhere. And elsewhere is usually to the federal government to which all too many look for security. But it was the private sector that brought security to those who recently found themselves out of jobs. I refer to the more than seventy medical societies that have set up programs to care for the needy and unemployed. While government is still debating what to do about those unfortunate people, the medical profession has acted and they are being cared for.

I think this House would be remiss if it did not take time during this meeting to commend those societies for what they have done and are doing. When President Reagan wrote to me thanking you through me for what you have done for the unfortunate workers he concluded with "God bless all who are engaged in this noble effort."

On the subject of medicine and government, we cannot allow this nation to import the brand of care available in many western European nations. Once admitted to a hospital in some of those nations, the patient is denied access to his or her personal physician. Because the medic staff works for the hospital not for the patient.

Of all the times and places a patient needs personal care it is at such a time. President Reagan expressed such anxie humorously as they wheeled him into the operating room after he had been wounded. He said to the surgeon: "I hope you are all Republicans."

I made the point about drawing the line against less tha personal care, against less than the kind of good care we want to give. I want to reemphasize it now. We can and w will continue our programs and our projects to help bring efficiency and productivity and cost-effectiveness to medical and health care. But there must be one place where we say: "No more." We must make it clear that patient care will not be compromised. That the quality of care is not negotiable. That the integrity of physicians is no for sale. That the right of patients to quality care from a fully qualified and fully licensed physician will not be sacrificed to economic or political need. Expedience will not replace needed care.

In any other area of our deliberations and activities, ther is room for adjustment, for agreement, for compromise, fo balance, even for sacrifice. But there is no room for any of those, when an individual physician begins to care for an individual patient. If present trends continue, there might be a day when people would no longer recognize the valu or practicality of having a personal physician. They would seek care from any of the various walk-in clinics and centers near their homes. Physicians might man those centers giving technically good but impersonal care to the people who come in.

As a result and this, to me, is the real tragedy: In some future year, no physician would be able to say that the Bassett family, mother, father, children, and grandchildren are his patients. Even sadder, no patient would be able to answer the question: "Who's your doctor?" As Napoleon said in his farewell address to his troops: "Adieu Mon Ami, would that I could clasp each of you to my heart."

Frank J. Jirka, Jr., M.D.—**Traveling New Streets: A Compact with the People**

In ascending to the highest elective office of our Federation, I stand before you acutely aware of both the size and the import of the attendant responsibilities. I also stand before you with my first message as your President. It will be a straightforward and plain-spoken message, and it is a message I hope American Medical Association Delegates and other physicians will share with our colleagues back home.

My messaage has to do with a different kind of medical marketplace that is fast developing in this country; a marketplace characterized by increased competition and pronounced changes in reimbursement and delivery. My message has to do with the challenges posed for everyone concerned. It has to do with the societal challenges, with the economic challenges and with the governmental challenges associated with the marketplace.

It has to do with the need for the American people to understand that since we all have contributed to the medical and health care problems now confronting us, especially problems related to cost, we all must contribute to the eventual resolution of those problems.

It has to do with the need for those in government and n the private insurance industry to understand that the ecisions made in legislative and administrative halls irectly translate into decisions made regarding the quality, he availability, the accessibility and the intensity of patient are. My message also has to do with the need for our rofession and others in the health care field, individually nd collectively, to understand that cost has become an mportant factor in the decisions that we do make egarding patient care.

These are not easy decisions. When we are confronted vith the difficult and even disturbing problems of the resent, especially cost problems, human nature often ompels us to look back on what was a more prosperous nd economically more tranquil past. But there is no urning back of time or of history.

As a society, we cannot go back to the day when virtually nlimited amounts of private and public insurance dollars vere available to pay for just about anything the patient vanted and for everything we were able to provide. And ve cannot go back to a physician-patient relationship with nlimited, shared expectations in terms of the quality and vailability of care without any shared responsibility for its ost. No, we cannot go back to these things because some ery sharp social, economic and governmental turns have aken place, and we are indeed traveling on new streets.

There are the persistent constraints in the general conomy and in government budgets. And, yes, there has een a promising recovery of late. But there are no signs hat the recovery will become a renaissance.

So, we can continue to count on a whole shelf full of overnment programs and proposals to make Medicare and Medicaid more cost effective. But we must insist these rograms and these proposals do not compromise the uality, availability or accessibility of patient care—care the American people so rightly deserve.

Meanwhile, other factors such as the rapid increase in our aged population and the need for health priorities to compete with other social and governmental priorities will einforce the disparity between limited resources and irtually unlimited demands for medical and health services. At the same time, the employers' share of health insurance premiums and related costs in this county is now more than $100 billion a year and climbing. And, through cost shifting, hose employers are having to pay through private nsurance programs what is not paid by public programs. So here indeed will be increased demands for a more competitive and cost effective marketplace for the inancing and delivery of care. And because of increases in he physician population and in the numbers and kinds of other health professionals as well as alternative delivery settings, the marketplace itself will surely become more competitive.

To be successful in a more competitive medical environment, individual physicians must make deliberate efforts to match their practice patterns to changing patient needs and socioeconomic conditions. Yes, the pressures to provide care in more effective as well as competitive settings are bound to intensify, and each physician must recognize this, and act accordingly.

Our Association has provided ways in which our profession and our organizations and institutions may adjust to that marketplace and make it more cost effective. It's not my purpose to review all of that good work here this evening, especially since many of the people in this audience have been among the navigators and the pilots. Suffice it to say we recognize that the nation can no longer afford the most expensive care in the most expensive settings.

What the nation must have is appropriate, effective care in appropriate, cost-effective settings. It's up to physicians individually and collectively, to create and to utilize such settings; for insurors to provide adequate coverage for such settings; for government to pay their fair share for such settings; and for the patient to accept care in such settings.

These are the challenges before our society.

These are the new medical and health care streets the nation must travel.

And these are the new streets each physician must travel.

Along the way, we must reach those Americans who seem to think that somewhere, somehow, someone else will pay the cost of medical and health services. We must remind those Americans that in one way or another they ultimately do pay the cost.

Needlessly high cost translates into needlessly high taxes or into needlessly high insurance premiums paid by employers, with fewer dollars available for wage increases or for other fringe benefits. So Aunt Mary or Uncle Joe should not insist on needless hospitalization just because they have insurance, especially if treatment can be effectively performed in an outpatient setting or in the doctor's office. Those Americans who waste precious dollars for services they don't need are subtracting from the dollars available for services that other Americans do need.

Along the way, we need to remind insurance executives, legislators and elected officials that in whatever setting care is provided, the books should not be balanced on the backs of our patients. As physicians, our first and foremost obligation must be to our patients, and we must not, we can not, we will not permit that obligation to be compromised.

But along the way, we must also reach those physicians who still seem to think that competition and cost effectiveness apply to some other practice, or to some other hospital, in some other town. We must reach those physicians who seem to think it will be medical practice as in the past, business as usual, and that somewhere, somehow, someone else will pay the cost. Such medical practices are no longer realistic.

Because of the new streets we're traveling, the cost of care is a subject for negotiation. And just as we must collectively negotiate with private and public insurers, each physician has a similar responsibility, right down to the individual doctor-patient relationship. I don't mean negotiation in an adversarial sense, but in a medical sense or in the sense of what is clinically necessary to meet but not exceed the real needs of patients.

For example, if a less intensive and less expensive course of treatment is adequate to the real needs of patients such as Aunt Mary or Uncle Joe, whether that treatment is given in the hospital or in the doctor's office, then that course should be explained to the patients and should be so prescribed.

Meanwhile, justifiable concerns have been expressed as to whether a medical practice or a hospital should be considered a business or our larger health care system an industry. I do not think that's the real issue, for we all know that medicine is a professional service.

The real issue, however, is whether we can individually and collectively be more businesslike in practicing medicine that is both care effective and cost effective. This is the only way, in fact, that we can protect and preserve our professionalism and the quality of care we provide to our patients.

My father, who was a physician as was his father, wrote a book titled "American Doctors of Destiny." It dealt with individual physicians who recognized they not only had a compact with each patient but, through our profession, a compact with the American people. Equally important, they were actively involved in meeting both, in civic as well as clinical terms.

We need more physicians who are so involved—in their practices, in our profession, and in our Federation.

This is the message I will present during the coming year. It is a message I hope you will take to your medical societies, hospitals and colleagues back home.

Let these be the streets that we travel, and let these be the challenges we put before our profession and before society at large.

I'm sincerely grateful to all of you for making this occasion possible. As I said last year and say again this year, the office of President belongs to you, the members of this Association. It will be an open-door office. As I travel to large and small medical societies, I want to listen to you and learn about your concerns so that your American Medical Association can be more responsive to those concerns. So that together, we can address the challenges confronting our profession and society at large. So that we can help each other keep our compact with the American people.

For after all, are these not the main medical streets we must travel?

President Reagan—**American Medicine is the Best in the World Because it has Remained Private**

I'm delighted to address this annual meeting of the American Medical Association House of Delegates. Let me start by saying as strongly as I can, the quality of American medicine is unsurpassed and on that we don't need a second opinion. What our space shuttle is to technology, our health care is to medicine. In life-saving discoveries, in innovative treatment, in the overall quality of services, American's doctors have no peers. Your medical accomplishments are a gift to mankind that honors us all. And I have a special appreciation for the skill of some Washington doctors and nurses who patched up my old inner tube and had me rolling in no time. My respect for your profession is deep and personal.

Medicine is becoming increasingly hi-tech, or in some instances hi-bio. Through computers, lasers, nuclear devices, and various Star Wars technologies, your diagnostic and healing powers have multiplied over the last decade. We're going to make sure that trend continues by promoting solid math and science skills in our schools. We will also further that trend with an active Federal role in quality research.

I believe the Orphan Drug Act I signed in January eventually will add to your curing powers. As you know, the sad fact is that many diseases still cripple or kill hundreds of thousands of Americans because no drugs have yet been developed. Statistically, they are rare diseases; yet that is small comfort for those afflicted and their families. The cost of discovering and developing a new drug, of course, is often staggering. This legislation provides incentives for the private sector to develop drugs to treat these rare diseases.

And I'm proud to say the FDA under this Administration has proposed new initiatives to help streamline the drug approval process. We want a process that genuinely promotes the public health, not only by keeping unsafe and ineffective drugs off the market, but by enabling beneficial new drugs to reach those who need them more rapidly. We recognize full well that if the burdens of excessive regulation are lifted, the American medical community can do an even better job in protecting the health of the American people.

While the quality of health care in this Nation is unsurpassed, unfortunately, so are the costs. In fact, man patients believe a hospital should have a recovery room adjoining the cashier's office.

I know cost is a matter that concerns you as well. The American Medical Association deserves congratulations f its cost effectiveness programs and its Health Policy Agenda. And, as I did at the White House in April, let me again thank those medical societies that have private sect programs to assure cost will not prevent anyone from receiving medical care. But the problem of health care costs is so pressing you cannot carry the full burden alon

For the last twelve month period health care costs wen up almost two and a-half times the overall inflation rate. I 1982, the cost of health insurance rose nearly sixteen percent. Health care costs are consuming a growing porti of the Nation's wealth—this is wealth that cannot be spen on education, housing, and other social needs.

Health care costs are not just the concern of the sick in our society. Everyone is affected. The taxpayer picks up th tab for forty percent of all hospital bills, mainly through Medicaid and Medicare. Because of rising costs, the poor on Medicaid have seen their coverage reduced as states make cutbacks. Because of the increased cost of health insurance, employees have received lower cash wages. Consumers have paid higher prices for goods and service since the costs of employee health benefits must be included in the price of products. And the elderly who ar covered by Medicare face the threat of catastrophic illnes expense, against which Medicare offers no protection.

It's high time we put health care costs under the knife and cut away the waste and inefficiency. The growth in medical costs is malignant and must be removed for the continued health of the American people.

The danger is that high medical inflation may soon jeopardize the quality and access of our health care. America won't be able to sustain its unequalled health car system if citizens can't afford it. Not all Americans have th fancy, gold-plated, all-option insurance plans that cover every sneeze and itch. Yes, the big corporations can look after their people, but let's not forget that little guy down at the doughnut shop.

Don't get me wrong. It's not bad to spend money on health care, far from it. The Nation's high level of health expenditures is testimony to our people's compassion. We cannot and we will not scrimp on the health of America's citizens.

But on the subject of compassion, let me clear somethir up. In spite of all the stories you hear on television, the truth is that this Administration in 1984 will devote more money to health care than any administration in history. That probably surprises you. But 49 million elderly, poor and disabled citizens—one out of every five Americans—will have health care needs met through Medicare and Medicaid in 1984. That's a million more than this year and three million more than in 1980. With this kind of solid record, you can understand why I get a little irritated by those who say we're cutting health care.

I've also read those know-nothing stories about this Administration ignoring childhood disease. Well, let me ju tell you that in the last two years, the reported cases of diphtheria, measles, mumps, polio, rubella and tetanus ha reached all-time lows. The measles rate is down by nearly half over 1981. The problem is that Washington is full of special interest groups passing around self-serving studies that are then reported as fact. They serve up headlines but too many of them don't serve up the truth.

I understand why doctors are torn by our attempts to pu the brakes on the budget. Like most citizens, you want to slow the growth in Federal spending. Yet, at the same tim ofessionally, you worry that this braking action may affect r health care—especially the health care of our poor. Let e reassure you. We're not trying to limit the quality and cess of America's health care; we're trying to save it. We int a health care system that is affordable and fair to all nericans.

There are some who, no matter what the problem is, ink money's the answer. And if they're not proposing ore money, they're proposing more Government controls er the practice of medicine.

The Government plays a role, of course. I believe edicare and Medicaid have filled genuine needs in our ciety. But our Federal health care system was designed ickwards. The incentives have not been to save, but to end. Medicare and Medicaid costs have gone up nearly 0 percent since 1970. For too long, the Federal overnment has had a blank check mentality; the hospitals nply filled in the amount they wanted and then Uncle m—or to be more precise, the hard-pressed American xpayer—paid the bill.

Today, for example, Medicare payments for treating a art attack can average $1,500 at one hospital and $9,000 at other, with no apparent difference in quality. Likewise, edicare payments for hip replacements can vary from ,000 to $8,200—and payments for cataract removal can ry from $450 to $2,800.

One of our reform measures to control hospital costs has ready been passed. No longer will we pay virtually hatever the hospital asks. With our prospective payment ogram, we'll pay one fair rate. The hospital that delivers services at a cost less than the rate will keep the fference. In the past the Government actually subsidized id encouraged inefficiency by paying more to the efficient hospital than to the efficient one.

Medicare cost sharing has often seemed backwards as ell. Under current law, unbelievable as it seems, Medicare ospital coverage can actually expire in the event of atastrophic illness—just when it's needed most. And even hen the coverage has not expired, those in for hospital ays over sixty days must make very high out-of-pocket ayments. In contrast, those with shorter hospital stays pay othing out-of-pocket after the first day. It's cheaper for e patient to be at the hospital than at home.

We're trying to make coverage fairer by using moderate ost-sharing early in an illness, rather than imposing severe osts later when the patient has little choice over the length f the hospital stay.

Under current law, the average patient hospitalized in 984 for 150 consecutive days would owe $13,475 from his r her pocket, and then bear the total cost of all ubsequent hospital care. Under our plan, the patient ould owe only $1,530 with absolutely no cost for ubsequent hospital care.

The co-payments proposed for Medicaid are nominal—$1 $2 a day—and intended only to discourage the nnecessary use of services.

We also propose limiting the current tax subsidy for high-riced health plans. Most employer contributions for mployee health benefits should be tax free because this ncourages employee health insurance. Our plan would imply cap this tax-free treatment in order to correct the ias toward high-priced first dollar coverage. Health nsurance should cover hepatitis and whooping coughs, not iccups. The proposed cap is an effort to make the tax law eutral in the choice between added wages and added ealth benefits.

Some of these reforms, such as prospective pricing, atastrophic coverage, and capping tax-free health nsurance, many of you either support or remain flexible. nd I want to thank you for these positions. I realize that other of our reforms, such as Medicare vouchers or competitive bidding, many of you don't support.

I'd like to explain an additional proposal you don't support—the one-year freeze on Medicare physician reimbursement. These payments have been increasing at highly inflationary rates. In 1982 they increased 21 percent and are expected to rise 19 percent more in 1983. We believe physicians, too, must share the burden of slowing the rise in health care costs. As the patient in the movies often says, "Give it to me straight, Doc." Well, we believe the straight answer is that a 1-year freeze is painful but necessary medicine.

In spite of occasional differences of opinion, our goals are the same as the American Medical Association's. As written in your constitution more than a century ago, the purpose of the American Medical Association is "to promote the science and art of medicine and the betterment of public health." We, too, are looking for ways to improve the health of the American people—and we need your support and your ideas.

Before I go, let me briefly mention an issue important to you both as citizens and as doctors. Last week I sent a message to another group of doctors, who were gathered at an international conference in Holland. They were not meeting on heart disease or nerve disorders. They were meeting on the matter of preventing nuclear war.

I told them that we have an unprecedented opportunity to reduce nuclear arsenals. Very serious negotiations are proceeding in Geneva between the United States and the Soviet Union on the means of achieving substantial, equitable, and verifiable reductions in our nuclear arsenals and on building the mutual confidence necessary to reduce the risks of nuclear war. No task has greater significance for us, our Allies, and for the entire world than to work for the success of the Geneva negotiations and reverse the growth in nuclear arsenals.

We've been making a great effort to move these negotiations forward. Just two weeks ago, I announced that our negotiator, Ambassador Ed Rowny, would be going to Geneva with new instructions to give us greater flexibility in the talks, and to take account of concerns the Soviets have expressed to us. I told the doctors these negotiations deserved the full support of all who seek genuine progress toward peace.

That was my message to the international group of physicians—to reaffirm that nuclear war cannot be won and must never be fought. I invited their support for the important arms reductions negotiations underway in Geneva. Today, I invite your support as well so that we can make real progress toward the genuine peace we all seek for ourselves and for our children.

Charles Kettering once said that the greatest thing any generation can do is to lay a few stepping stones for the next generation. That is what we're trying to do. We want to lay stepping stones to better health care and a more secure peace for America. With your assistance we can do it.

ArMA Reports

The minutes appearing in this section have been condensed. A complete copy of them will be sent to any member requesting them.

ArMPAC BOARD OF DIRECTORS

The ArMPAC Board of Directors met on June 15, 1983.

A balance sheet and cash flow statement as of May 31, 1983, was presented by Kevin Walker. The ArMPAC General Fund balance is $2,864.95; the Educational Fund balance is $1,873.

The Board reviewed ArMPAC contributions to state legislative and congressional candidates during 1982. A total of $14,750 was distributed to candidates for the state House and Senate. $32,850 was contributed to federal candidates in Arizona by ArMPAC.

A general discussion followed on how the ArMPAC Board should base its decisions on candidates to receive ArMPAC support. Dr. Moore felt that too much reliance had been placed on the lobbyist's recommendations and that ArMPAC had far less influence than in the past. Numerous observations were made regarding past contributions and suggestions were made for greater Board participation in the process.

Dr. Neubauer informed the Board that the bylaws required election of a secretary, treasurer and assistant treasurer.

It was moved and carried that Manuel Ma. Guerrero, III, M.D. be elected secretary.

It was moved and carried that Iain A.D. Todd, M.D. be re-elected treasurer.

It was moved and carried that Kevin Walker be re-elected Assistant Treasurer.

Pac Goals and Objectives

A general discussion was conducted regarding goals and objectives for the PAC. Among the suggestions made were the need to increase information to and education of physicians in the political process; to increase PAC membership; and to allow for more physician participation in the area of legislative contributions. It was agreed that Arizona Medicine might be more effectively used to inform physicians of legislative issues and where specific legislators stood on issues of importance to medicine. The discussion also centered on the relationship between ArMA's Legislative Committee and the PAC.

Dr. Neubauer appointed the following regional chairmen: Iain A.D. Todd, M.D., Phoenix; William J. Mangold, Jr., M.D., Tucson; and Manuel Ma. Guerrero, III, M.D., Central Arizona. Additional appointments will be made after Dr. Neubauer has completed telephoning physicians around the state.

The Board reviewed ArMPAC's promotional brochure and asked that it be rewritten to stress the tax benefits of political contributions. Dr. Moore agreed to supply staff with examples of materials used by the opthalmologists' PAC. A draft copy of the new brochure will be mailed to all Board members.

It was moved and carried that ArMPAC request contributions of $100 and that the tax benefits be clearly explained to physicians.

The Board agreed to cosponsor with AMPAC political education seminars in Tucson and Phoenix. Staff was directed to talk with AMPAC staff about the possibility of shortening the seminar to one day each. The Tucson physicians suggested either September 24 or October 1 for the seminar to be held at the Pima County Medical Society building.

Staff was directed to contact Mr. Barr's office regarding ArMPAC's $500 contribution to his 1982 campaign. The checks have not been cashed and the Board would like to have them returned if he does not plan to accept the contribution.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
 Lung Association
Walter O. Boswell Memorial Hospital,
 Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
 of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoe
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoeni
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Progra
 (THMEP) Tucson
University of Arizona College of Medicine,
 Tucson
Veterans Administration Medical
 Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations ab produce a variety of continuing medical educat programs. Each accredited institution a organization is responsible for designating whic these programs meet ArMA's requirements Category 1 credit. Physicians who participate programs which are designated Category 1 accredited institutions will receive Category 1 cre toward the ArMA Certificate in CME and the AM Physician's Recognition Award.

AUGUST

Advanced Cardiac Life Support Recertification/Provider
August 24-26. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider course approved for 21 hours of Category 1 cred and Recertification approved for 13 hours

SEPTEMBER

Advanced Cardiac Life Support Recertification/Provider
September 28-30. Cowden Center, John C Lincoln Hospital, Phoenix. Sponsor: ACLS AZ Affiliate Amer. Heart Assn. and ArMA. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credi and Recertification approved for 13 hours.

Speech Pathology
September 30. Scottsdale Hilton, Scottsdale. Sponsor: St. Luke's Hospital and Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 North 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

OCTOBER

Emergency Update '83
October 6-7. Ramada TowneHouse, Phoenix. Sponsor: Phoenix Baptist Hospit and Medical Center. Contact: Sharon Luczu, Education Department, Phoenix Baptist Hospital and Medical Center, 6025 North 20th Ave., Phoenix, Arizona 85015. Approved for 12 hours of Category 1 credi and 15.6 Contact hours for nurses.

irst Annual Arizona hild Custody Institute
ctober 7 & 8. Scottsdale Hilton, cottsdale. Sponsor: Family Law Section nd Law and Counselling Committee of the tate Bar of Arizona, Family Law ommittee of the Maricopa Bar Assn., St. uke's Hospital and Medical Center. ontact: Chris Campbell, Meeting Planner, t. Luke's Hospital and Medical Center, 525 . 18th Street, Phoenix, Arizona 85006. pproved for hour per hour Category 1 redit.

urrent Perspectives I—Bioethics
ctober 15. ArMA Building, Phoenix. ponsor: Arizona Medical Association. ontact: Nikki Mertz, Arizona Medical ssociation, 810 West Bethany Home oad, Phoenix, Arizona 85013. Approved r 3½ hours of Categroy 1 credit.

dvances in Therapeutics ew Drugs
ctober 21-22. Poco Diablo Resort, edona. Sponsor: University of Arizona ollege of Medicine, Department of nternal Medicine, Office of Continuing edical Education. Contact: Continuing edical Education. U. of A. Health ciences Center, Tucson, Arizona 85724. pproved for 9.5 hours of Category 1 redit.

entral Neuropsychiatric ssociation-Sleep and leep Disorders
ctober 21 and 22. Camelback Inn, aradise Valley. Sponsor: Camelback ospital. Contact: Dr. George Peabody, 46-4228. Approved for 11 hours of ategory 1 credit.

dvanced Cardiac Life Support ecertification/Provider
ctober 26-28. Cowden Center, John C. ncoln Hospital, Phoenix. Sponsor: ACLS, Z Affiliate Amer. Heart Assn. Contact: oug Allen, Arizona Chapter American ollege of Emergency Physicians, 810 est Bethany Home Road, Phoenix, rizona. Provider course approved for 21 ours of Category 1 and Recertification pproved for 13 hours.

NOVEMBER

d Annual Southwestern oison Symposium
ovember 4-5. El Conquistador, Tucson. ponsor: U. of A. College of Medicine. ontact: Office of Continuing Medical ducation and Outreach, U. of A. Health ciences Center, Tucson, Arizona 85724. pproved for 15 hours of Category 1 credit.

urrent Perspectives II, Diseases of izona, Including Cocci
ovember 9. Pima County Medical Society uilding, Tucson. Sponsor: Arizona edical Association. Contact: Nikki Mertz, izona Medical Association, 810 West ethany Home Road, Phoenix, Arizona 013. Approved for 3½ hours of Category credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.
Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference Rm. A, Contact: N. Wendell Todd, M.D.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium.
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6 p.m., Auditorium Contact: Leonard Joffe, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ. Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.

Advanced Cardiac Life Support Recertification & Provider
November 16-18. Phoenix. Sponsor: Arizona Affiliate American Heart Association, ACEP. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona 85013. Provider course approved for 21 hours of Category 1 and Recertification course approved for 13 hours.

Annual Fall Pediatric Conference—Allergy & Asthma
November 26-27. Scottsdale Doubletree. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 8.25 hours of Category 1 credit.

Ericksonian Approaches to Hypnosis & Psychotherapy
November 30-December 4. Phoenix Civic Plaza. Sponsor: Arizona State Hospital and Milton H. Erickson Foundation. Contact: Jeffery K. Zeig, Ph.D., Milton Erickson Foundation, 3606 North 24th Street, Phoenix, Arizona 85020.

DECEMBER

12 Annual Radiology Seminar
December 9-11. Camelback Inn, Scottsdale. Sponsor: Maricopa Medical Center. Contact: Office of Continuing Medical Education, 2601 E. Roosevelt, Phoenix, Arizona 85006. Approved for 22 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification and Provider
December 14-15. Phoenix. Sponsor: Arizona Affiliate, American heart Association, ACEP. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider Course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Current Perspectives III Cerebral Vascular Disease
December 14. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Rd., Phoenix, Arizona 85013. Approved for 3½ hours of Category 1.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoneix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.
A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.
Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.
Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conf. Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.
Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.
Surgical Department CME
4th Friday, 7 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 86016. Contact: Medical Staff Secretary for additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

Desert Springs Hospital

DESERT SPRINGS HOSPITAL
OF LAS VEGAS, NEVADA
presents
its Fifth Annual Medical Symposium

IMMUNOLOGIC AND COLLAGEN - VASCULAR DISORDERS

September 24 and 25, 1983
at the
DESERT INN AND COUNTRY CLUB

This program will provide an update in recent advances in the evaluation and management of immunologic and collagen-vascular disorders. Useful information for a contemporary physician to incorporate into his or her practice will be stressed.

FACULTY

EVELYN V. HESS, M.D.
McDonald Professor of Medicine
Director, Division of Immunology
University of Cincinnati Medical Center
Cincinnati, Ohio

CHARLES E. REED, M.D.
Professor of Medicine
Chairman, Department of Allergic Diseases and Internal Medicine
Mayo Clinic and Medical School
Rochester, Minnesota

PETER F. KOHLER, M.D.
Professor of Medicine
Division of Clinical Immunology
University of Colorado Health Sciences Center
Denver, Colorado

RICHARD TOMPKINS, M.D.
Professor of Medicine
Division of Rheumatology
Mayo Clinic and Medical School
Rochester, Minnesota

FEE: $150.00 covers the cost of instruction, materials, three meals and all breaks.

ACCREDITATION: The Nevada State Committee on Continuing Medical Education has approved the symposium for eleven (11) credit hours of Category I CME Credit. Eleven (11) hours have also been approved by the American Academy of Family Practice and the Nevada State Board of Nursing.

For course registration and information please write or call Stephen A. Kollins, M.D., Medical Education, Desert Springs Hospital, Box 19204, Las Vegas, NV 89119, (702) 369-7793.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obsterical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Provlem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..

Review of GYN Pathology Slides
Weekly, Tuesday, 4 p.m.

Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.

Patholgy Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.

Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7 a.m.

OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.

Surgery
Weekly, Wednesday, 7 a.m.

Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.

Psychiatry Staff
1st Wednesday, 11 a.m.

Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.

Medicine Cardiology
1st Wednesday, 12 Noon.

Medicine Hematology
2nd Wednesday, 12 Noon.

Medicine Mortality
3rd Wednesday, 12 Noon.

Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.

Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.

Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.

Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.

Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..

Anesthes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7 :30 a.m.

Anesthesiology Journal Club
4th Thursday, 8 a.m.

Ambulatory Pediatarics
Weekly, Thursday, 8 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8 a.m.

Burn Mortality Conference
4th Thursday, 8 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.

Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.

OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Friday, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.

Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12 :30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8 a.m.

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501 West 10th Place, Mesa, Arizona 85201. Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

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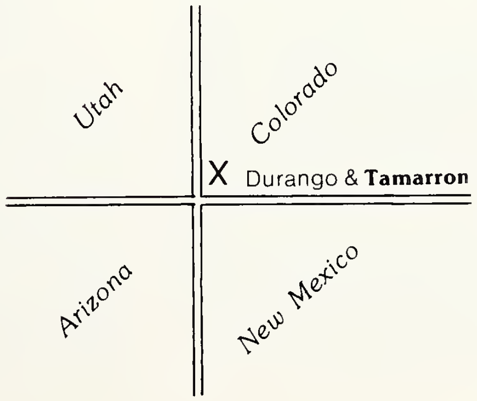

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2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact: Dr. Zeller.
Urology Conference
Weekly Friday. 12-1 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.
Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact: Dr. Young.
Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.
Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.
Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.
Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Category 1 credit.
Radiology Conference
1st Tuesday, 7:00 a.m.
Operation Outreach
2nd Tuesday, 6:30 p.m.
Pathology Conference
4th Tuesday, 7:00 a.m.
Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.
Anesthesiology Board Review Conference
2nd & 4th Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4-5 p.m., Room 5403.
Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4-5 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact:
Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4-6 p.m., AHSC, Contact: Dr. J. Goldstone.

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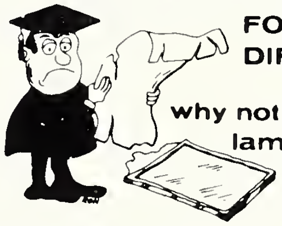

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JOURNAL OF ARIZONA MEDICAL ASSOCIATION
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Arizona Medicine does not hold itself responsible for statements made by any contributor. Although all advertising is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

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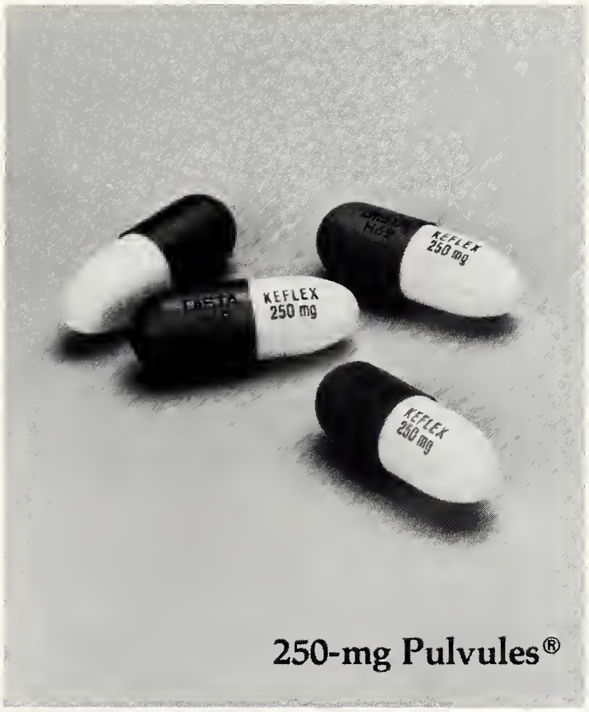

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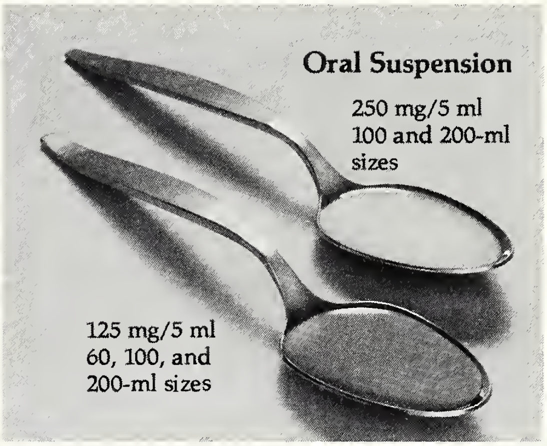

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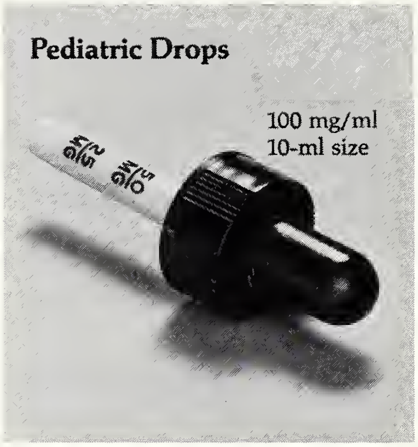

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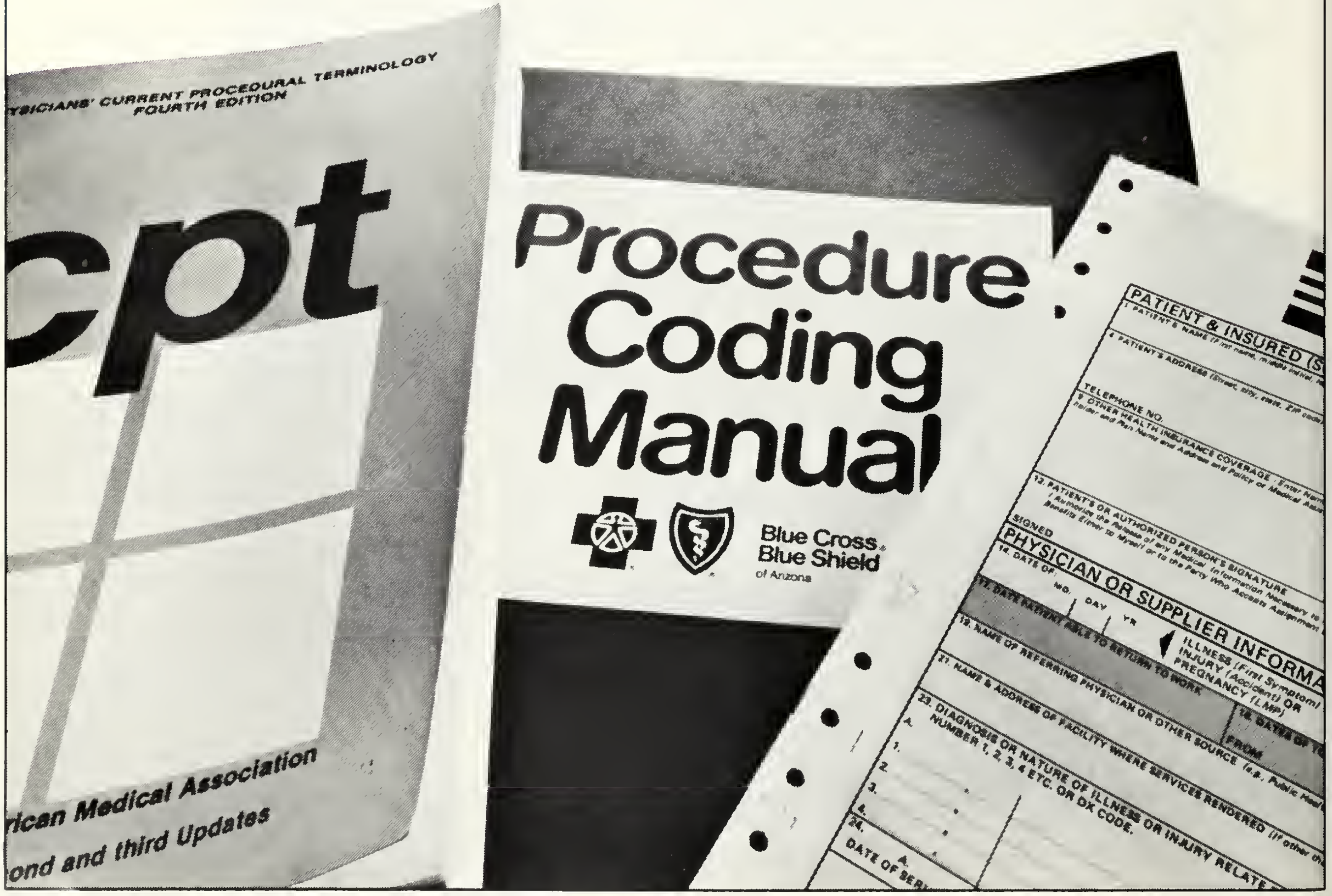

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On the opening of Humana Hospital Desert Valley,

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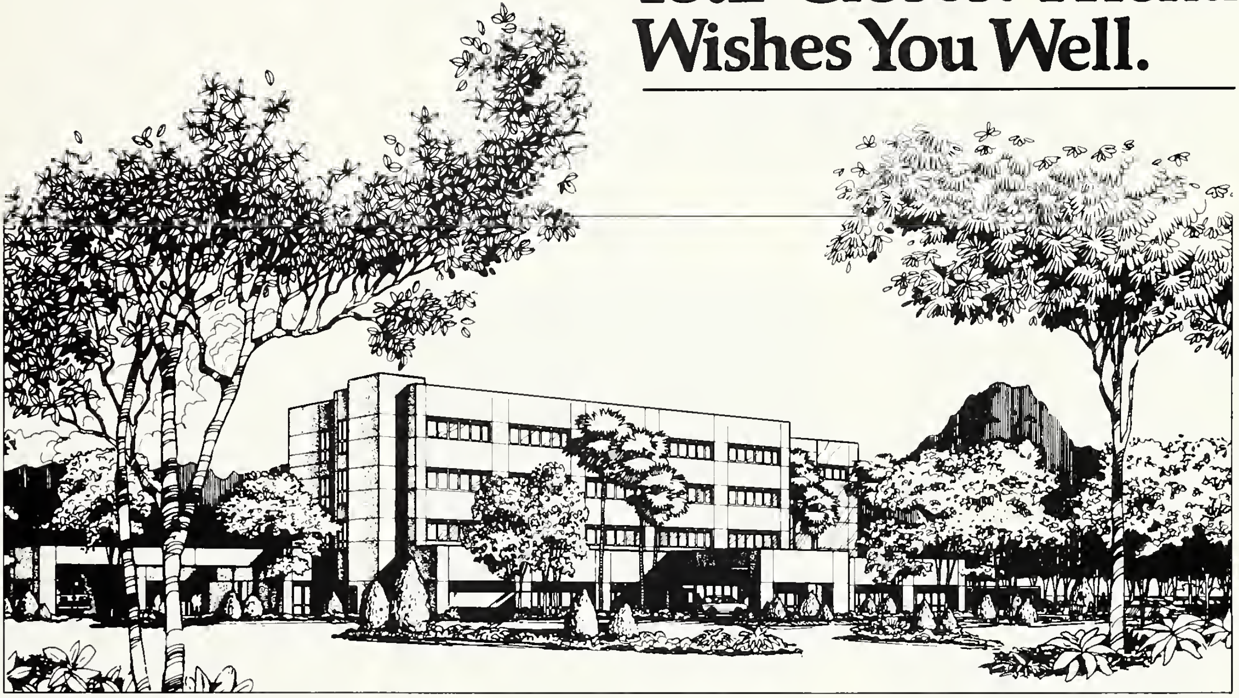


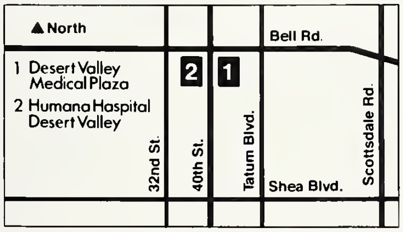
Sharing more than proximity, Desert Valley Medical Plaza and Humana Hospital Desert Valley embody the spirit of cooperation that can flourish among like-minded professionals. Complementary medical facilities separated by 40th Street on Bell Road, the two have developed simultaneously and with awareness of the ways in which their services will mesh.

Inspired by the expressed needs of physicians, their support staffs and patients, Desert Valley Medical Plaza is a 90-tenant complex with a core of primary care physicians and general practitioners. Medical specialists and ancillary facilities are also accommodated in balanced proportion within an environment integrally designed to promote well-being.

Created by the design team that produced The Borgata of Scottsdale, Desert Valley Medical Plaza features interior courtyard entrances to private offices, private and secure covered parking for physicians, on-site health spa, employee lounge and other amentities. In addition, communications technology provides the potential for links to Humana Hospital Desert Valley that would allow instantaneous transfer of vital patient data.

Because of their proximity and shared concerns, Desert Valley Medical Plaza and Humana Hospital Desert Valley promise to provide an unparalleled health care setting for the county's fastest-growing neighborhoods. Contact the Desert Valley Medical Plaza Partnership at The Borgata of Scottsdale (991-9808) for information on space availability.

DESERT VALLEY MEDICAL PLAZA



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Prototype Medical Office Complex Ope

Desert Valley Medical Plaza offers physicians' offices immediately adj

Appreciating a fine team's synchronization should come naturally to a physician. Timing, interdependence and professionalism are all qualities that can swing an endeavor towards fruition or failure, for, as medical personnel are well aware, in life-threatening situations, the ability of a group to function immediately, accurately and smoothly is essential.

Those involved in the healing arts should, therefore, find a comfortable mesh of attitudes and approaches in the design plan for the Desert Valley Medical Plaza.

Desert Valley Medical Plaza was created exclusively to meet the anticipated needs of doctors, their support staffs, and patients. The plaza facility, located directly across the street from the new Humana Hospital Desert Valley, concentrates around a primary care and general practitioner physician core, medical specialists, ancillary support facilities and the environmental amenities most desired in a setting orchestrated for human comfort.

It's the most outstanding example of a medical office plaza . . .
—John R. Hamilton

The scope of the project and sophistication with which it has matured should come as no surprise to those familiar with another local landmark—the Borgata of Scottsdale—that came into being under the same hands. John R. Hamilton of The Borgata's development firm, Brian Cranfield of Design International, W. Wilson Jones, A.I.A. and Jerry K. Mah, A.I.A. of the Scottsdale-based firm Jones & Mah Architects Incorporated, Michael Evan James, A.I.A. of the space planning division of Peter A. Lendrum Associates, Inc. and David Mattson of J.B. Contractors, Inc. again merged their talents to produce the Desert Valley Medical Plaza. Though the two projects may at first appear to have little similarity—since the Borgata is a high-fashion shopping and restaurant complex modeled after a bell-tower-highlighted town in Italy—they in fact share several salient design features.

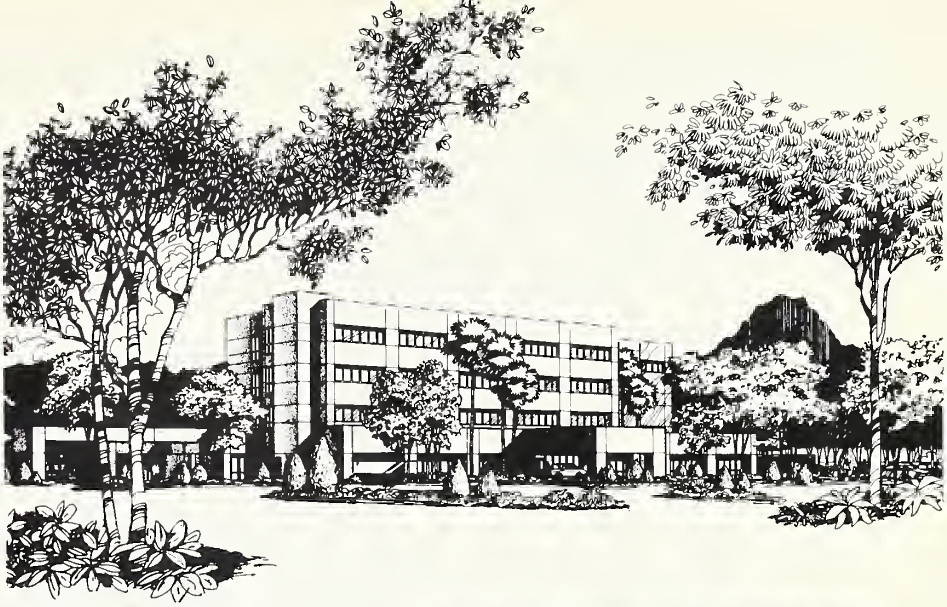
John R. Hamilton

Both the Desert Valley Medical Plaza and The Borgata of Scottsdale came about after extensive research was conducted into the needs and preferences of user tenants and their clientele. Both are large complexes that define space in ways that are scaled to promote ease of human interaction. The sagacity with which creators of both spaces contemplate the projects is evident in the fact that the earliest planning stages indicate exact types of users for specific spaces. Thus, retailers at The Borgata can expect a balance of high fashion shops and physicians locating at Desert Valley Medical Plaza will not face the problem of a concentrated community of competing specialists.

In addition, according to Brian Cranfield, "Desert Valley Medical Plaza, like the Borgata, by the very nature of the design elements—such things as colors, textures, spacial relationships and ambient light and sound levels—will impart the mood most desired by the tenants for their clients. At The Borgata, that mood is one of being in a special place filled with rarities and pleasures. In a

North Valley

Humana Hospital



edical plaza, the desired mood is ne of being put at ease.

"The people who come in to see hysicians usually are experiencing a gh level of stress," continues ranfield. "They are worried about hysical problems and their amifications and they're afraid of the nancial impact of their disorders. Ve've created an environment that ill not only be calming to people ho are anxious but will promote reventative medical maintenance y offering a pleasant place to come ."

"We also responded to specific echnical and business preferences of edical tenants," adds John amilton. Among these he explains, re consideration in placement of fices for patients with ambulatory isorders, single level of patient-ccess offices, private covered arking and separate entrances for hysicians, considerate signage, and n-site support facilities such as a harmacy, laboratory and radiology ervices. "We have also provided xercise facilities, doctor's lounge and mployee lunchroom on the second evel," continues Hamilton.

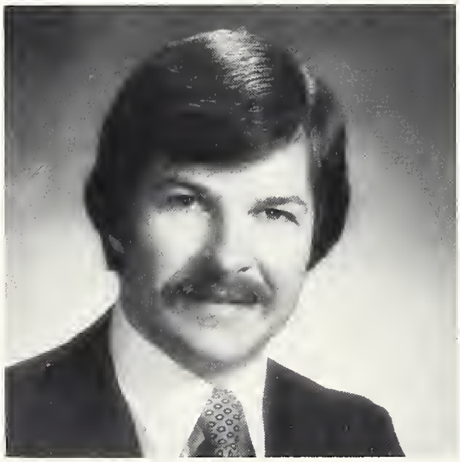
---

ur job is to ensure that each hysician tenant's space works in he most effective way possible.
—Michael Evan James, A.I.A.

Another Borgata-like attribute dapted for the Desert Valley Medical Plaza is the introversion of he interior spaces. Ample parking is rovided around the complex, but ccess to doctors' offices is offered nly through the three interior ourtyards and connecting pedestrian valkways. The design elements in hose open air protected places are ubdued and welcoming, opulent but ot flashy. Reflective glass effectively loubles the amount of lush greenery, while the whisper-grey-toned surfaces offer a soothingly neutral background palette.

Proximity to the Humana Hospital Desert Valley, located south of Bell Road and directly across 40th street from the medical plaza, is indisputably crucial. Studies conducted in the economic ramifications of medical office location, according to Hamilton, unanimously conclude that physicians practicing next to a hospital generate significantly higher income than those farther away. Advances in communications technology assure additional advantages; computer linkage that can be made between doctors' offices and the hospital have the potential for simplifying and speeding the transfer of needed data.

Experience has confirmed the design team's initial premise that investing in quality construction materials is an up-front expense that is repaid many times over. Desert Valley Medical Plaza, therfore, was built to be energy efficient with solar glazing, overhead insulation at the top of the construction industry's standards, heavy landscaping and low maintenance materials. On-site property management and a tenant association are planned to further facilitate response to needs.



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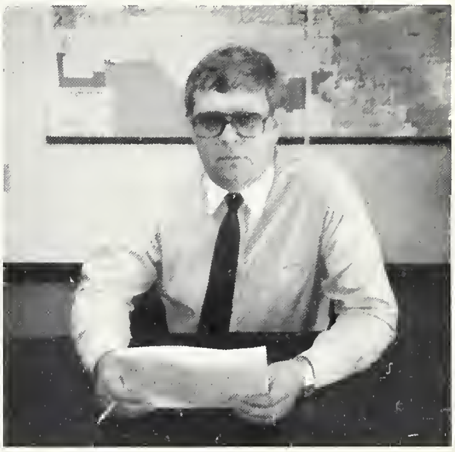

Dave Mattson, J.B. Contractors, Inc.

Quality construction materials are an up-front expense that is repaid many times over.
—David Mattson, J.B. Contractors

When researching existing facilities," says Cranfield, we invited physicians, technicians, patients and designers who specialize in this area to point to the most outstanding examples of medical plazas. Ninety percent of them had no place they could point out as exemplary and none of them mentioned as ideal any complex in this county.

"Our intention is for Desert Valley Medical Plaza to become that prototype," continues Cranfield.

For additional information contact the Desert Valley Medical Plaza Partnership at the Borgata of Scottsdale—991-9808—for information on space availability.

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Asymptomatic Myocardial Ischemia

Richard D. Gerkin, Jr., M.D.
Kenneth B. Desser, M.D.
Alberto Benchimol, M.D.

Editor:
Kenneth B. Desser, M.D.

The term "myocardial ischemia" is usually associated with discomfort which characterizes angina pectoris or the pain associated with acute myocardial infarction. In the Framingham study, however, 23% of all acute myocardial infarctions were perceived as painless. There is a well recognized association of diabetes mellitus with painless myocardial infarction, yet recent investigations have disclosed a high incidence of painless myocardial ischemia in subjects without known neurologic abnormalities.

In the evaluation of myocardial ischemia, objective methods must be utilized. Four technics are commonly accepted as useful for the detection of myocardial ischemia or its effects:

1. Stress-induced left ventricular wall motion abnormalities, as seen in either radionuclide or contrast ventriculography.
2. Abnormalities of myocardial perfusion as detected by injection of thallium-201 during stress-testing.
3. Abnormalities in lactate metabolism, demonstrable by sampling blood from the coronary sinus during pacing or stress.
4. S-T segment depression during exercise treadmill testing or during ambulatory electrocardiographic monitoring.

Myocardial ischemia and chest pain are linked neurochemically.[1] Ischemia activates kinins which stimulate nerve fibers. These fibers connect to C_8-T sympathetic ganglia and course via the lateral ascending pathways in the spinal cord to the thalamus and cerebra cortex. The perception of pain is also based on simultaneous traffic in related neural pathways resulting in modulation. Despite intensive investigation, the nature of ischemic pain sensation is unclear. For example, myocarditis results in kinin activation, yet is usually a painless process unless there is concomitan pericarditis. Some have proposed that painful ischemia is, per se, a sign that a larger extent of myocardium is involved when compared with painless episodes. Conflicting data have been submitted regarding this proposition.

Droste and Roskamm examined 44 patients during treadmill testing.[2] Twenty-two patients who developed chest pain and S-T segment changes during the test were compared with 20 patients who had S-T segmen changes without pain; those with pain had deeper S-T segment depressions. The two groups were then tested for pain thresholds. Those who had painless S-T segmen changes had higher thresholds to both electrical and ischemic pain based on a standard physiologic protocol.

Varying levels of endorphins may result in individua differences in pain perception. Naloxone has been reported to decrease the time from development of S-T segment changes to the time that chest pain is perceived during exercise testing.[3]

Exercise radionuclide ventriculographic studies were performed by Cohn et al.[4] in 40 subjects. Twenty-fou patients had angina pectoris by history and 16 had asymptomatic coronary artery disease. The exercise ejection fraction fell by the same amount in both groups and there was no difference in the number o myocardial segments which exhibited abnormal wal motion.

Ischemic S-T depression detected by holter monitoring may also be accompanied by pain or unassociated with symptoms. Of thirty-nine subjects with coronary artery disease who underwent ambulatory monitoring thirty-two had S-T segment changes. Eight had painfu episodes, nine painless, and fifteen both types o episodes.[5] In general, the duration of painless episode was shorter and the S-T segment depression of lesse magnitude when compared with the painful episodes. In order to elucidate the significance of S-T segmen changes on the holter examination, another study wa performed with standard monitoring done as a baseline. The monitoring was then repeated during the hourl administration of nitroglycerin. The frequency of both painful and painless S-T segment depression decreased during the period of nitrate prophylaxis.[6]

Chierchia et al.[7] evaluated fourteen patients who were monitored with Swan-Ganz catheters in a coronary care unit. Of all episodes of S-T segment depression, 84% were asymptomatic; 63% were associated with a rise in pulmonary capillary wedge pressure by $>$5mm; and 84%

From: The Institute for Cardiovascular Diseases, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona 85006. Reprint requests to Alberto Benchimol, M.D., Good Samaritan Medical Center, P. O. Box 2989, Phoenix, Arizona 85062. Supported in part by the E. Nichols Memorial Fund and The Institute for Cardiovascular Diseases, Phoenix, Arizona.

had a decrease in myocardial performance. Asymptomatic episodes contrasted with symptomatic episodes in that they were of shorter duration, were associated with a smaller rise in wedge pressure and better myocardial contraction.

Given the presence of silent myocardial ischemia, what are its implications in relation to the extent of coronary artery disease or prognosis? Weiner et al.[8] studied a group of 302 subjects with positive exercise stress test. At cardiac catheterization, 91% of those who had angina during the test had coronary artery disease, with 94% of subjects demonstrating multivessel involvement. Of those who had no pain during the stress test, 75% had coronary artery disease, with 51% having multivessel disease. Cole and Ellestad[9] conducted a long term follow-up study (4 to 7 years) in 1402 subjects with a positive stress test. Those who had angina pectoris during testing fared worse than those who only had S-T segment changes. The risk of myocardial infarction or coronary death was doubled in those with pain.

It is possible that episodes of silent ischemia reflect a smaller amount of myocardium at jeopardy and are associated with less significant physiologic changes than are episodes with pain. There is also individual variation in pain threshold that determines whether ischemia will be painful. However, it appears that painless ischemia may portend less severe disease and a better prognosis than painful ischemia. Painless ischemia still must be recognized and evaluated. In the patient with known coronary artery disease, such as the setting of evaluation following a myocardial infarction, the indication and value of screening for ischemia are clear. In subjects without known coronary disease, the matter is more complex.

Mass screening of asymptomatic subjects has not been shown to be cost effective. Based on Bayes' theorem, a test performed on a population which has a low prevalence for a disease will yield a high percentage of false positive results. Large groups have been investigated by Froelicher et al.,[10,11] who studied aviators required to undergo periodic exercise stress test due to the nature of their occupation. In one group, 76 men with a positive exercise test underwent cardiac catheterization. Forty-three percent had significant coronary artery disease. In a later study, 138 men with a positive stress test were found at cardiac catheterization to have a 25% incidence of coronary artery disease. Therefore, many of the exercise stress tests resulted in S-T segment depression in subjects without demonstrable coronary atheroclerosis.

Combining an exercise test with another technic is a logical approach and more specific for the diagnosis of myocardial ischemia. Caralis et al.[12] performed exercise stress tests in 3,496 asymptomatic men; twenty-two of these subjects had a positive test. Fifteen of these underwent thallium-201 exercise testing and coronary arteriography. The thallium stress tests results had a sensitivity of 90% with an 80% specificity. Uhl et al.[13] studied asymptomatic subjects and detected 191 with positive stress tests; all underwent exercise thallium scans and cardiac catheterization. The sensitivity of thallium stress imagery for detecting obstructive coronary disease was 90%.

Silent myocardial ischemia is a common occurrence and can be detected in several ways. The phenomenon probably reflects less myocardium at risk and may indicate a better prognosis than painful ischemia. Individual differences in pain perception can result in some episodes being painless. Screening for ischemia in an asymptomatic population without known coronary artery disease is likely to be expensive and lead to false positive tests. On the other hand, selective testing of high risk subjects may represent one avenue of approach for the early detection of this lethal disorder.

Finally, it should be recognized that the term "asymptomatic" is subject to interpretation and is based on recall. Remote ischemic pain may not impress the afflicted patient who might ascribe discomfort to "indigestion" or "muscle strain." Truly silent myocardial ischemia is not well understood, obviously dangerous and requires further investigation.

Acknowledgement

We wish to acknowledge the technical assistance of Jennie Goff.

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Acyclovir

Denise Wood, Pharm. D.

Editors:
Ronald C. Hansen, M.D.
Robert A. Schwartz, M.D.

Acyclovir, a new antiherpetic agent, is a forerunner in the field of antiviral therapy. Most antiviral agents with activity against the herpes group of viruses belong to a class of compounds known as nucleosides. Acyclovir, a-(2-hydroxethoxymethyl) guanine (Figure), is an acyclic analog of the natural nucleoside guanine. Its lack of toxicity and efficacy set it apart from the other antiviral agents that are currently marketed. *In vitro* data demonstrate a declining relative susceptibility of herpesvirus to acyclovir as follows: Herpes simplex virus type 1 (HSV-1) > Herpes simplex virus type 2 (HSV-2) > Varicella Zoster virus (VZV) > Epstein-barr virus (EBV) >> Cytomegalovirus (CMV).[1]

Acyclovir five percent ointment (Zovirax®) has received approval by the Food and Drug Administration for the following indications: 1) initial herpes genitalis and 2) limited, non-life threatening mucocutaneous herpes simplex virus infections in the immunocompromised patient. The newly released intravenous preparation also has two FDA approved indications: 1) severe initial clinical episodes of herpes genitalis in patients who are not immunocompromised and 2) initial or recurrent mucosal and cutaneous herpes simplex (HSV-1 and HSV-2) infections in immunocompromised adults and children. Clinical investigations are presently underway using oral and ophthalmic dosage forms.

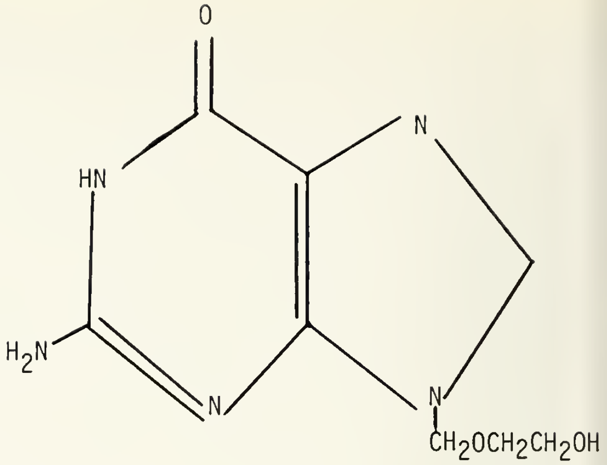

Figure
The chemical structure of acyclovir.

Pharmacology

Due to the natural progression of viral disease, it is difficult to assess drug therapy response to treatment because 1) viral replication and shedding occur before clinical symptoms and appearance of lesions; 2) clinical symptoms may resolve without treatment in normal hosts; and 3) recurrences commonly occur because the virus remains in the body in a dormant or latent phase. Virus can only survive as an intracellular parasite.

Mechanism of Action

Acyclovir is a highly potent inhibitor of herpes simplex virus (HSV), types 1 and 2, and varicella-zoster virus (VZV) while having extremely low toxicity for the normal host cells. This selectivity is due to the ability of these viruses to code for a specific viral thymidine kinase capable of phosphorylating acyclovir to a monophosphate. This capability is essentially absent in uninfected cells because host cells do not contain this enzyme. The acyclovir monophosphate is subsequently converted to acyclovir triphosphate by cellular enzymes. The triphosphate form acts as a more potent inhibitor of the viral DNA polymerase than of the cellular polymerase. Like the other nucleosides, this process ultimately leads to inhibition of viral replication.[2-5]

Resistance

Since the mode of action of acyclovir involves only two virus-specified enzymes, thymidine kinase (TK) and DNA polymerase, changes in either of these enzymes may lead to the acquisition of resistance to acyclovir. Deficiency of TK is the most common method by which resistance emerges. Selection of TK deficient virus has occurred in immunodeficient patients receiving IV

From: Pharmacy Service, Veterans Administration Medical Center, Martinez, California. Reprint requests to Dr. Denise Wood, Veterans Administration Medical Center, 150 Muir Road, Martinez, California 94553.

cyclovir. It has been found that TK deficient virus are not as virulent and do not readily establish latent infections. However, the failure to establish latency with TK deficient viruses is not absolute. Latent infections can be established and reactivated with difficulty using large inocula of the remaining classes of mutants isolated *in vitro*, all of which retained their full pathogenic properties.[6,7]

Pharmacokinetics

IV acyclovir exhibits a two compartment model and dose-dependent kinetics. Peak levels following IV doses of 250 mg/m^2 and 500 mg/m^2 were 10.3 and 20.7 mcg/ml respectively. After oral doses of 200 mg, the mean peak level was 2.5 mcg/ml.[8] Systemic absorption of acyclovir after topical administration is minimal.

This agent is taken up into all tissues including the CSF where levels obtained are about 50% of plasma levels. Peak levels after multiple dosing are similar to peak levels after single equivalent doses indicating little drug accumulation when patients are dosed every eight hours. Gastrointestinal absorption is rather poor with a total bioavailability estimated to be in the range of 15% to 30%. Because plasma protein binding is relatively low (9% to 22%) acyclovir is not expected to be involved in drug interactions mediated by protein binding displacement.[9]

Acyclovir is eliminated by both glomerular filtration and tubular secretion with a half-life of approximately three hours. Only 9% to 14% of acyclovir is metabolized to 9-carboxymethoxymethylguanine (CMMG), the major metabolite. CMMG has little antiherpetic activity. Plasma levels fall about 60% during the course of hemodialysis and replacement doses should be considered.[9]

Clinical Trials

Herpes Genitalis

Infection of the lower genital tract by herpesvirus type 2 is a sexually transmissible disease of increasing frequency and seriousness. The prevalence varies greatly but may be as high as 2.5% in some areas. Herpesvirus type 2 is associated with later cervical dysplasia and may predispose to cervical carcinoma. This infection during pregnancy is responsible for a higher prevalence of spontaneous abortion and stillbirth. During delivery, the herpes virus may be transmitted from active lesions along the birth canal to the neonate possibly resulting in neonatal death.

Corey et al.[10] studied 77 patients with first episodes of genitial herpes and 111 patients with recurrent episodes in a double-blind trial comparing topical acyclovir with a placebo (polyethylene glycol ointment). Among acyclovir treated patients with first episode primary genital herpes, the mean duration of viral shedding (4.1 days) and the time to complete crusting of lesions present at the initiation of therapy (7.1 days) was shorter than among placebo recipients (7.0 and 10.5 days respectively), Acyclovir treated patients with recurrent herpes had a shorter duration of viral shedding than placebo recipients (1.9 days versus 9.5 days). Among the patients with recurrent herpes, acyclovir reduced the time of crusting in men but had no effect on the symptoms or healing times in women. Topical application did not influence the frequency of formation or delay the appearance of new lesions during the course of therapy.

Mindel et al.[11] studied IV acyclovir and found it to be effective in decreasing the length and severity of primary genital herpes. However, its effect on the recurrence rate remains to be determined. Twenty-five patients with primary genital herpes were treated in a double-blind placebo-controlled trial of IV acyclovir 5 mg/kg every eight hours for 15 doses. The median healing time of all lesions was significantly decreased from eleven to seven days, and the median duration of viral shedding from all lesions was decreased from eight to two days. Whereas patients treated with placebo continued to develop new lesions for a median of two days after initiation of treatment, no new lesions developed in patients treated with acyclovir.

Fiddian et al.[12] found that oral acyclovir was well-tolerated and shortened the course of both initial and recurrent genital herpes. A representative double-blind trial of oral acyclovir and placebo was done with ninety patients having genital herpes (29 initial and 61 recurrent episodes). The thirteen culture positive patients with initial disease who received acyclovir had a shorter median duration in days of viral shedding (1.0), pain (3.5), combined symptoms (3.5), time to crusting (3.5), and time to complete healing (5.5) than the eleven culture positive placebo recipients whose scores were 8.0, 4.5, 4.5, 9.0, and 11.0 respectively.

Patients with recurrent disease receiving acyclovir also experienced a reduction in the median duration in days of viral shedding (0.5), time to crusting (men only, 3.0), and time to complete healing (5.0), compared with control patients (2.5, 4.0, and 7.0 days, respectively). New lesion formation was effectively prevented by acyclovir in patients with both initial and recurrent genital herpes.

Herpes Simplex Virus in the Immunocompromised Host

The natural course of recurrent mucocutaneous infection in normal persons is generally of short duration, making the evaluation of antiviral agents difficult. In contrast, HSV infections in immunocompromised patients may be prolonged, severe, and on occasion, the cause of death. Such patients with HSV infections can thus provide an opportunity to test the efficacy of antiviral therapy and may also benefit most from the availability of effective agents.

The efficacy data on topical acyclovir is somewhat discouraging. In contrast to topical use, IV administration is more effective for treatment of HSV infections in this patient population. The apparent elimination of reactivated infection with prophylaxis and the improved resolution of disease shown in numerous studies attests to the value of IV acyclovir for the treatment of HSV infections in bone marrow transplant recipients. Several double-blind placebo-controlled studies[13-18] showed that patients treated with IV acyclovir 250 mg/m^2 every eight hours had significantly shorter periods of virus shedding and lesion pain, and more rapid lesions scabbing and healing.

Although acyclovir administration can provide effective prophylaxis against reactivated infections, its use does not appear to eradicate latent infections. Saral et al.[19] showed that acyclovir treated patients were protected while the drug was being administered but 50% of these patients had mild culture positive HSV infections after cessation of the drug.

Wade et al.[16] also found that recurrent infections were common. Sixteen of the original seventeen acyclovir recipients developed recurrent virus positive lesions a median of 21 days after treatment. Four of these recurrences were severe enough to warrant a second treatment course.

These findings suggest that clinical recurrences of HSV infections can only be suppressed as long as inhibitory levels of acyclovir are frequently achieved. Straus et al.[20] experimented with various prophylactic regimens in an attempt to decrease the recurrence rate. In one patient, three day cycles of oral acyclovir, 200 mg every four hours while awake, alternating with five day cycles off the drug interrupted asymptomatic shedding and delayed the appearance of the next clinical recurrence. Subsequent cycles of oral acyclovir given three times daily for two consecutive days each week initially appeared to be suppressive but ultimately permitted breakthrough of clinical recurrence.

For patients who have frequent recurrences, chronic therapy may be preferable to intermittent therapy. Whether prolonged prophylaxis is appropriate and whether there will be other side effects associated with long term treatment remains to be studied. The risk of acyclovir resistance exists, not only for the treated patient, but also for potential contacts.

Herpetic Ocular Infections

Herpetic keratitis is one of the most difficult ocular infections to treat. It often recurs and vision decreases gradually during episodes of recurrence. Until now, the only available treatment has been idoxuridine which has shown little effect once stromal reaction has occurred.

Coster et al.[21] conducted a double-blind study in which patients with herpetic keratitis were treated five times daily with either acyclovir 3% ointment or idoxuridine 1% ointment. The two antivirals were shown to be equally effective. These results were expected since the majority of ulcers (54 out of 60) were dendritic rather than geographic. Since idoxuridine is very effective against dendritic ulcers, which are generally much easier to treat, it is not likely that another antiviral agent will improve on its effectiveness.

McGill et al.[22] compared acyclovir 3% ointment and vidarabine (Ara-A) 3% ointment in a randomized, double-blind trial of patients with herpes simplex ulcerations. Treatment was continued five times a day until the ulcer had healed, then three times a day for three days. There was no statistically significant difference in the rate of healing between the two groups. Fifteen patients treated with acyclovir had an associated stromal reaction which resolved with the drug alone. Of the 2
patients in the vidarabine group with stromal reactio
four required additional steroids.

McGill observed that there was a lack of cross resistance between acyclovir and idoxuridine or vidarabine
This was exhibited in ten patients with clinically resistan
ocular infections to idoxuridine and vidarabine wh
were subsequently treated successfully with acyclovir.[1
As with other antivirals, topical administration for th
duration of the attack has had no effect on recurrenc
rate.

Herpes Simplex Labialis

Topical acyclovir has not been shown to alter th
course of herpes simplex labialis. Spruance et al.[23] conducted a double-blind, placebo-controlled trial in 20
patients with topical 5% acyclovir. Reduced viral shedding was seen in the subgroup of patients who entere
the study within eight hours of lesion onset, but n
differences were noted in the patients who bega
treatment nine to twenty-five hours after onset. N
clinical benefit from treatment with acyclovir wa
observed.

Herpes Zoster

Although data from the double-blind controlle
studies on acyclovir treatment of varicella zoster infections are incomplete, preclinical data strongl
suggests the possibility of efficacy. The drug has bee
found to be most effective in decreasing herpeti
keratitis in these patients.[18,22] The pain associated wit
herpes zoster improved with acyclovir therapy as well
Although the frequency of postherpetic neuralgia wa
not reduced significantly, the severity and persistance o
pain was significantly decreased. Very little effect wa
seen once neurological damage had occurred.[18]

Patients who experience cutaneous disseminatio
early (72 hours) in the course of herpes zoster infectio
are in particular jeopardy for visceral involvement an
would benefit from intravenous therapy. However, th
majority of patients with localized herpes zoster woul
be more appropriately treated on an outpatient basi
with oral acyclovir.[15]

McGill et al.[22] chose 21 patients with ocular herpe
zoster involvement. Eighteen of these patients receive
topical acyclovir alone. The disease was controlled in 1
patients with quick resolution of the signs. However, i
three of these patients the severity of uveitis increase
and topical steroids were required. The effects of acyclovir on herpes stromal disease is encouraging since i
may herald the use of this drug without concommitan
steroids. Use of acyclovir may lead to a shorter clinica
course than is presently achieved with antiviral
combined with steroids. However, a controlled trial o
acyclovir, with or without steroids, is needed.

Cytomegalovirus

Despite the fact that cytomegalovirus (CMV) does no
encode for viral thymidine kinase, CMV DNA polymerase is sensitive to acyclovir and *in vitro* studies have
shown some strains of CMV to be inhibited by acyclovir
The two *in vivo* studies using acyclovir for CM

fections showed opposing results.

Eight bone marrow transplant patients selected by ade et al.[24] exhibited no clinically signficant antiviral fect. Balfour et al.[25] observed that nine renal transplant tients treated with acyclovir had a significantly faster te of improvement and a more rapid defervescence. cyclovir appeared to clear CMV viremia; although, nce discontinued, viremia recurred.

This data supports the concept that acyclovir reduces ther than eliminates the total amount of virus. Patients ch as renal transplant patients may have adequate host fenses to clear the remainder of replicating virus; hereas, bone marrow transplant patients do not. Because the number of patients studied was small, another ntrolled trial with a larger number of renal transplant tients having CMV infections is underway.

art Virus

Wart virus, like viruses of the herpes group, is a DNA us, and might therefore be sensitive to acyclovir. This pposition cannot be tested by laboratory methods ce the virus cannot be grown in tissue culture. There d been one case report in which a patient with a seven ar history of severe, recurrent episodes responded to yclovir after all standard methods had failed.[26] owever, the effect of acyclovir on warts will need to be aluated in double-blind clinical trials.

ronic Hepatitis B

Preliminary studies indicate that acyclovir has no ef- ct on hepatitis B virus. It is thought that the virus does t express thymidine kinase.[27]

stein-Barr Virus

Two pediatric patients with Epstein-Barr virus (EMV) fections, the etiologic agent of infectious mono- cleosis, were treated with acyclovir. There was no jective evidence of clinical improvement after the urse of therapy.[28] Current studies are focusing on eatment of immunologically normal patients with early V infection.

lverse Effects

The prevalence of adverse effects to acyclovir seems be acceptably low. Topical acyclovir has been asso- ated with various local reactions such as burning, nging, rash, pruritus, and mild pain. However, there s been no significant difference in the rate or type of ported adverse reactions between the drug and pla- bo with either topical or oral dosage forms.[29]

Systemic acyclovir is also well tolerated. The most mmon side effect noted with IV administration is local itation at the site of extravasation and may be related the high pH of the intravenous formula.[29]

Laskin et al.[30] observed increases in SGOT and SGPT vels. He studied 20 bone marrow transplant patients in placebo-controlled trial. The only adverse effects that atistically differed in the acyclovir-treated group com- red with controls were the transient increases in OT (53.2 versus 3.1) and SGPT (59.7 versus 12.3).

Transient glomerular dysfunction is occassionally seen er IV bolus administration. The increase in serum eatinine can be virtually eliminated when rapid IV injections are avoided, attention is paid to hydration, and other renal damaging influences are controlled. Studies in dogs and rats show that the renal toxicity is caused by precipitation of acyclovir in the lower nephron due to its relatively low solubility.[31,32]

Reversible leukopenia has been reported;[17] however, acyclovir does not appear to inhibit marrow engraftment or cause substantial hematopoietic toxicity in bone marrow transplant patients. Neurotoxicity, manifested by tremors, has been reported.[2] One patient became lethargic and tremulous at a dose of 1000 mg/m^2 every eight hours. Acyclovir was discontinued, and over the next seven days, the symptoms resolved.

In animal studies, acyclovir did not exhibit carcinogenic, mutagenic, or teratogenic effects. There are, however, no adequate, well-controlled studies in pregnant women. Acyclovir should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. It is not known whether this drug is excreted in human milk.[32] In nine neonatal or premature infants, acyclovir was well tolerated and no clinically significant toxicity was observed.[33]

Overall, studies to date have shown all forms of acyclovir to be relatively free of adverse effects. However, further study is needed to determine the long-term effects of acyclovir.

Dosage and Administration

Regardless of route of administration, acyclovir therapy should be initiated as early as possible following onset of signs and symptoms if one is to have any chance at preventing dormancy of the virus in the dorsal root ganglion.

Acyclovir 5% ointment should be applied topically to each lesion every three hours (6 times daily) for seven days. A finger cot or rubber glove should be used when applying the ointment to prevent autoinoculation of other body sites and transmission of infection to other persons. To date, no data have shown that the use of acyclovir ointment 5% will either prevent transmission of infection to other persons or prevent recurrent infections when applied topically. Therefore, in the absence of signs and symptoms, acyclovir should not be used for the prevention of recurrent HSV infections. Although clinically significant viral resistance has not been observed, the possibility exists.

For intravenous therapy, adult doses of 5 mg/kg or 250 mg/m^2 every eight hours for five to seven days have been used. Studies in children show that 250 mg/m^2 IV every eight hours is an appropriate dosage. Acyclovir may be diluted with any conventional intravenous fluid. The recommended concentration is 1 to 7 mg/ml for IV administration through a peripheral line with a maximum concentration of 10 mg/ml. A more concentrated solution will increase the possibility of phlebitis at the site of infusion. The dose should be infused over no less than one hour.

Other dosage forms include 3% ophthalmic ointment and 200 mg capsules. In studies of ocular infections, the ophthalmic ointment was applied five times daily until the ulcer had healed, then three times daily for an additional three to seven days. The 200 mg capsules have been given every four hours for a total of five dosages daily.

Dosage adjustments in renal impairment are necessary and the following guidelines can be used:[9]

Creatinine Clearance (ml/min/l.73m^2)	**Interval (hours)**
> 50	Q 8
25-50	Q 12
10-25	Q 24
< 10	Q 24 (½ usual dose)

The replacement dose for patients on hemodialysis is half the suggested IV dose after each dialysis.[9]

Conclusion

Acyclovir is a well-tolerated antiviral agent with a unique mechanism of action. It is effective against a wide variety of herpesvirus *in vitro* and is showing promise in ongoing clinical trials against many of these viruses.

The topical formulation presently available has been shown to be effective only in initial episodes of herpes genitalis while oral and IV forms are effective at decreasing viral shedding and healing time in both primary and recurrent infections. Acyclovir ophthalmic ointment was found to be as effective as idoxuridine 1% and vidarabine. Topical acyclovir has not been shown to alter the course of herpes simplex labialis while studies using PO or IV acyclovir have not been done.

Even though IV acyclovir has shown some promise in decreasing the pain and dissemination associated with herpes zoster infections, more research in the area is needed. Very little data is available on acyclovir's use in CMV, EBV, and wart virus; however, studies are underway to clarify the antiviral's effectiveness. The usefulness of IV acyclovir in prophylaxis of the immunocompromised patient has been exhibited in several studies.

Because of the natural course of herpesvirus infections, it is unlikely that intermittent acyclovir therapy will offer relief to those suffering from severe or frequent recurrences. More studies are needed to determine further indications for use and to establish whether chronic therapy will be beneficial in preventing latent infections. The possibility of developing acyclovir resistance exists with increased duration of usage.

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Medical Genetics

igh Birth Defect ates in Arizona?

eographic and Ethnic Factors earing upon Late Childbearing nd Birth Defect Rates

rederick Hecht, M.D.
arbara K. Hecht, Ph.D.
ichard C. Wagner, M.S.

ditor:
rederick Hecht, M.D.

bstract

Arizona has been alleged to have an unusually high ate of birth defects. The mother's age at childbearing is factor in birth defects, since with increasing maternal ge there is an increase in children with chromosome bnormalities. Likewise, increasing age of the father levates the rate of new dominant mutant birth defects. Ve therefore examined mothers' ages at childbearing in rizona according to county and found wide geog-aphic differences. Northern Arizona counties including Coconino and especially Navajo and Apache counties ave elevated rates of late childbearing. These areas can e expected to have more birth defects purely due to ate age at reproduction.

Table 1
The Geography of Advanced Maternal Age in Arizona, 1981 by County of Residence

County	No. Births	Births to women ≧ 35 years No.	(%)
Apache	1,681	137	(8.15%)
Cochise	1,646	82	(4.98%)
Coconino	1,733	102	(5.89%)
Gila	760	33	(4.34%)
Graham	509	29	(5.70%)
Greenlee	299	12	(4.01%)
Maricopa	27,800	1,313	(4.72%)
Mohave	866	42	(4.85%)
Navajo	1,816	134	(7.38%)
Pima	9,130	402	(4.40%)
Pinal	1,899	77	(4.05%)
Santa Cruz	519	35	(6.74%)
Yavapai	998	49	(4.91%)
Yuma	1,944	92	(4.73%)
Arizona	51,620	2,539	(4.92%)

Considerable attention has been directed to birth defect rates in Arizona. Possible rises in these rates have been underlined by newspapers, television and other forms of public communication in Arizona.

The mother's age is a significant factor in birth defects. With increasing maternal age, the chance rises steadily for the birth of a child with Down syndrome (trisomy 21) or another malformation syndrome due to an extra chromosome.

With increasing paternal age, there is a rise in offspring with monogenic (single gene) mutations such as new cases of achondroplasia. Since mothers' and fathers' ages tend to be correlated, as the age of the mother increases, so does the age of the father generally rise. Hence, elevated age of parents at childbearing is closely correlated with two risks: the risk of trisomic children and the risk of mongenically mutant children.

Geography of Advanced Maternal Age in Arizona

The vital health statistics for Arizona include births according to county of residence and mother's age (but not according to father's age). We therefore tabulated births to mothers age 35 years or above in each county in Arizona using the 1981 data, Table 1.

In Arizona there were 51,620 births in 1981. Of these 51,620 births, 2,539 (4.92%) were to women 35 years or above.

There is considerable variation in rates from county to county. The range is from 4.01% in Greenlee county; to 8.15% in Apache county. Although both of these counties have a relatively small number of births, the difference between them was greater than two-fold.

The highest rate of older mother births was in Apache county. The second highest was in adjacent north-eastern Navajo county. We next examined the ethnic composition of births in Arizona.

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rom: The Genetics Center and Birth Defects Information Service of outhwest Biomedical Research Institute, 123 East University Drive, empe, Arizona 85281. Reprint requests to Frederick Hecht, M.D., 123 ast University Drive, Tempe, Arizona 85281. Supported in part rough funds provided by the Department of Health and Human ervices, Bureau of Health Care Delivery and Assistance for an Arizona enetics Program and by the Arizona State Legislature via the Center or Disease Control of the Arizona Department of Health Services for nvestigation of birth defects in Arizona.

Table 2
The Ethnicity of Advanced Maternal Age in Arizona 1981

Ethnic Origin	No. Births	Births to women ≧ 35 years No.	(%)
White	44,391	2,089	(4.71%)
Indian	4,878	352	(7.22%)
Black	1,759	55	(3.13%)
Asian	592	43	(7.26%)
Arizona	51,620	2,539	(4.92%)

Table 3
Ethnic Distribution of Births in Northeastern Arizona

County	Births	Indian Births No.	(%)
Apache	1,681	1,382	(82.21%)
Navajo	1,816	1,096	(60.35%)
Arizona	51,620	4,878	(9.45%)

Ethnicity of Advanced Maternal Age in Arizona

The vital health statistics for Arizona include ethnic origin according to White, Indian, Black and Asian. We examined the numbers of births in Arizona according to ethnic background, Table 2.

The largest number of births was to White mothers: 44,391 (86%). The second largest number of births was to Indian mothers: 4,878 (9.45%). The remaining births were to Black and Asian mothers: 2,351 (4.55%).

Compare the two largest childbearing groups of mothers: White and Indian. A notable difference is seen in late childbearing, Table 2. The percent of women with babies born at maternal age 35 years or above was 4.71% in Whites and 7.22% in Indians. The rate for advanced maternal age deliveries was 53% higher in Indians than Whites in Arizona.

It is of interest that Asian mothers tend to late childbearing with a rate of 7.26% comparable to that of 7.22% in Arizona Indian women. By contrast, the late childbearing rate in Arizona Blacks is low: 3.13%.

Ethnicity of Advanced Maternal Age in Northeastern Arizona

Since the rate of late childbearing varies in Arizona according to ethnic origin, we examined the births by ethnic origin in Apache and Navajo counties, the two most notable counties for late childbearing and the most northeasterly counties in Arizona, Table 3. In Apache county 82.21%, more than four in every five births were Indian. In Navajo county 60.35%, about three in every five births were Indian. By contrast, less than one in every ten births statewide was Indian.

The high rate of late childbearing in northeastern Arizona clearly appears to reflect the predominantly Indian population in northeastern Arizona.

Ethnicity of Advanced Maternal Age in Other Parts of Arizona

Aside from Apache and Navajo counties in northeastern Arizona, certain other counties in Arizona have what appear to be unusually high rates for late childbearing, notably Santa Cruz county on the Mexican border of Arizona, 6.74%; Coconino county in the center of northern Arizona, 5.89%; and Graham county in southeastern Arizona, 5.70%.

Santa Cruz county had 519 births. Of these 519 births, 446, 85.93% were Hispanic. Unfortunately, the vital health statistics for Arizona do not divide Hispanic birt according to maternal age. However, it appears that th relatively high rate of late childbearing in Santa Cru county may relate to its predominantly Hispanic population.

Coconino county in northern Arizona is adjacent t Navajo county which in turn borders on Apache count Of 1,733 births in Coconino county, 707, 40.80% wer Indian and 194, 11.19% were Hispanic. It seems mo likely that the high rate of late childbearing in Coconin county is due to the sizable proportion of Indian birth

Graham county in southeastern Arizona had relativel few births: 509 in 1981. Of these births, 439, 86.25% wer White. The White births included 163 Hispanic births, s that Hispanic births accounted for about a third, 32% c all births. The basis for the possible elevated rate of lat childbearing in Graham county is still uncertain present and needs further investigation.

Conclusions

Counties in Arizona range widely in late childbearin The highest rates are in Apache and Navajo counties i northeastern Arizona. These high rates of late reproduction in northeastern Arizona reflect the predominantly American Indian population in this area c Arizona.

Coconino county, which also has a significant percen of Indian births, likewise has an elevated rate of lat childbearing. This is in keeping with the fact that ou Arizona Indian population, which accounts for near ten percent of births in Arizona, has a high rate of lat childbearing.

Similarly, Santa Cruz county on the Mexican border c Arizona has a relatively high rate of late childbearin Since this county is largely Hispanic, this strongl suggests that our Hispanic population, at least in certai parts of Arizona, may tend to late reproduction. Th hard data to document this fully are currently unavailable.

Other segments of the Arizona population may als be inclined to late childbearing. Morman (L.D.S families in rural areas, for instance, may continue havin children later than the general population. Howeve since Arizona vital health statistics omit religion, th general question of religious factors in late childbearin cannot currently be explored with precision in Arizon

he Issue of High Birth Defect Rates

Areas of Arizona with elevated rates of late hildbearing can be expected to have increased rates of irth defects. More babies with Down syndrome and ther trisomies will be born proportionately in northern nd northeastern Arizona than elsewhere in Arizona. oconino, Navajo and Apache counties are at an espeially elevated risk, purely on the basis of advanced naternal age.

Parents' ages tend to rise together, so that the rates of ew dominant mutations will rise in high areas for late hildbearing. An excess of new cases of achondroplasia nd other genetically dominant disorders can be exected to surface in northeastern Arizona.

It is common today to attribute many birth defects to nvironmental factors: radiation exposure (uranium nining and nuclear fallout), heavy metal contamination, tc. We would suggest extreme caution in conjectures, ince genetic factors play an important role in birth lefect rates. Parental ages at childbearing must be onsidered before etiologic thinking can be done about high" birth defect rates in Arizona.

etinoblastoma in Navajo Indian Children

Retinoblastoma, an eye tumor, is one of the ten most ommon cancers in children occurring with an observed ncidence of one in 18,000 live births worldwide and the ncidence appears to be rising over time.

Retinoblastoma is unusual in that a third to a half of atients have an autosomal dominant gene responsible or their cancer. The gene for retinoblastoma can be nherited from a parent or can occur as a new mutation n the child who is at 50% risk for transmitting it to each f his children.

The Navajos have been reported to have an excess of etinoblastoma.[1] From the Navajo population, six cases f retinoblastoma were observed from 1971-1981, a upposed excess. However, chromsome studies were ot done in four of the six cases to exclude the 13q-hromosome deletion syndrome which is also closely ssociated with retinoblastoma and more importantly, aternal age was ignored. From this alone, a significant ncrease in new mutant disorders such as retinoblastoma s to be expected in the Navajos.

The failure to take into account a matter of such implicity is important. Birth defect rates cannot be valuated in a genetic vacuum.

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Neurology

Chymopapain and Lumbar Disc Protusion

John R. Green, M.D., F.A.C.S.
Howard Aidem, M.D.
Lewis Brown, M.D.
Stephen Brown, M.D.
Walter George, M.D.
Timothy Harrington, M.D., F.A.C.S.
George Hoffman, M.D.
Robert Johnson, M.D.
Andrew Shetter, M.D.
Volker Sonntag, M.D.
Jon Whisler, M.D.
Robert White, M.D.
Tony Yeung, M.D.

Editors:
James L. Frey, M.D.
J. Michael Powers, M.D.
Lawrence Z. Stern, M.D.

Historial Highlights

1934 The herniated intervertebral lumbar disc was first clinically described and treated with laminectomy by Mixter and Barr[1] in 1934.

1956 Chymopapain, an enzyme that could break down cartilaginous protein polysaccharide, was introduced by Lewis Thomas.

1963 Lyman Smith[2] developed chemonucleolysis, a technique injecting chymopapain into herniated lumbar intervertebral discs that had not responded to conservative therapy, to hasten chondo-mucoprotein degradation.

1974 Ten thousand Americans received chymopapain intra-discal therapy between 1963 and 1974. Approximately 200,000 patients were treated by excision annually. Early clinical trials failed to convince the FDA of the effectiveness of chymopapain therapy, in spite of the fact that the majority had good results, and the drug was withdrawn from use in the United States. This therapy was continued in Canada.

From: The Joint Neurosurgical and Orthopedic Surgery Committee on Intra-discal Therapy of St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona 85006, John R. Green, M.D., F.A.C.S., Chairman.

1980 A clinical study was instituted by a group of neurosurgeons and orthopedic surgeons[3] from the University of Wisconsin, Washington University, Rush Presbyterian-St. Luke's Medical Center, Abbott-Northwestern Memorial Hospital, Minneapolis; Long Beach, California Memorial Hospital; Massachusetts General Hospital; Swedish Hospital, Seattle; and the University of Chicago, designed to, 1) avoid earlier methodological difficulties, and 2) study a population of patients for whom extended conservative therapy had failed and who were candidates for laminectomy on a single disc level. The object of the study was to establish whether a refined form of chymopapain (Chymodiactin) was better than injection with placebo in reducing or eliminating the need for additional surgical treatment in patients for whom laminectomy would be the remaining course of treatment. Permission was sought and obtained from the FDA to conduct this study.

1983 The double-blind randomized study[3] demonstrated that chemonucleolysis using chymodiactin (Chymopapain) is a useful alternative to patients who are candidates for lumbar disc excision. The drug was leased by the FDA for clinical use. Ten weeks later, the traditionally competitive American Academy of Orthopedic Surgeons and the American Association of Neurological Surgeons began a massive, cooperative, professional education follow-up: nearly 40 one-day courses for over 6,000 orthopedic and neurological surgeons in Chicago and Los Angeles. In Phoenix, Howard A. Aidem, M.D., Chairman of Orthopedic Surgery and John R. Green, M.D., Chairman of Neurological Surgery at St. Jospeph's Hospital and Medical Center organized a Joint Orthopedic and Neurological Surgery Intra-discal Therapy Committee to formulate and to supervise this therapy at St. Joseph's Hospital, including indications, contraindications, credentialing, monitoring and developing a prospective computerized registry for these procedures, their complications and results.

Indications for Consideration of Intra-discal Therapy

Following a complete evaluation of the patient suffering from low back and leg pain, and a failed trial of conservative therapy, a patient may be considered for further treatment. Patients with a clear-cut clinical picture who have previously been considered for surgical therapy now will be provided an option of chympapain injection into the involved intervertebral disc space. Chymopapain therapy may be considered to be the first stage of surgical management. The ideal candidates are those who demonstrate a clear-cut disc protrusion, with symptoms directed to the appropriate site. Those patients we would consider for injection have the following:

1. Those who have had an appropriate trial of conservative therapy consisting of complete bed rest, analgesics, and physical therapy for an adequate period of time. This may vary from two to four weeks. Those who continue with unremitting pain, and are unable to perform everyday activities or return to work are candidates for further therapy.

2. The patient has a clear-cut radiculopathy, consisting of an appropriate combination of the following findings:

   a. radicular pain/numbness into the leg following a specific dermatome.

   b. sensory loss following the same dermatome.

   c. weakness of a mild-to-moderate degree of dors or plantar flexion in an L5 or S1 root distribution respectively.

   d. limited straight-leg raising test on the involved side.

   e. depression of a deep tendon reflex.

3. Along with these signs and symptoms of disc protrusion, the patient must have an abnorma myelogram confirming the disc protrusion at the appropriate site. Ancillary methods may be required to confirm the presence of a disc protrusion; i.e., CT scan discography, epidural venography, electromyography etc.

4. In cases not conforming to these indications, the surgeon has the privilege of requesting special consideration for permission to proceed by means o individual review by this Committee, i.e., patients with midline bulging discs, minimal radicular findings and failure of conservative care.

Ideal candidates for chymopapain injection are also the ideal candidates for surgery, except for the patien with a large extruded fragment who will likely no benefit from chymopapain injection, and will ultimately require an operative procedure. If the patients fulfill the above criteria, they may be considered for chymopapain therapy.

Contraindications

1. Patients with major weakness in a muscle group should undergo immediate surgical discectomy Furthermore, if a rapidly progressive muscle weakness i developing, surgery is indicated.

2. Those patients who demonstrate sphincter disturbance should undergo emergency discectomy.

3. If extensive spondylosis or spinal stenosis exists in the lumbar region, and the examiner deduces that the major myelographic defects are caused by bony spurs, i is unlikely that chymopapain will be of help; thus, such a patient would not be injected.

4. The possible teratogenic effects of Chymopapain on the fetus have not been evaluated, so injection o chymopapain is contraindicated in a pregnant woman. A pregnancy test should be performed on any woman o childbearing age before this procedure.

5. A patient who has an allergy to papaya, or to any meat tenderizer is excluded from this treatment. As well if a patient has already had one chymopapain injection he should not undergo a second injection, due to the risk of allergic response as a result to hypersensitivity caused by the first injection.

6. A patient who has previous surgery at the curren symptomatic level is not a candidate for intradisca therapy with chymopapain because of associated sca

ssue, and the frequent findings of an extruded fragient.

Less clear-cut contraindications for chymopapain ierapy include the following:

1. Patients who have a workman's compensation laim have fared less well than the noncompensation orker with lumbar discectomies, and the same tuation appears to exist with chymopapain injections. hus, these patients must be evaluated individually on ieir own merit. As well, patients involved with litigation r having a psychiatric disturbance must be analyzed arefully, and only after pursuing all therapeutic ptions.

2. Female patients who have sed rates of 20 or more e considered to be hazardous risks until the sed rate ormalizes.

3. Patients who have had previous disc surgery and ow present with a disc protrusion at a new level are in iis category.

reoperative Considerations

istory:

- Females have sixfold increased incidence of rections if their sed rates are 20 or over.
- People with other allergic reactions may be prone reaction.
- Exclude people with history of prior anaphylactic or iaphylactoid reactions.
- People with congestive heart failure, coronary sease, or impaired cardiopulmonary physiologic reerve may require special monitoring.
- People receiving beta-adrenergic blockers should e monitored carefully.

retreatment:

- H and H_2 blockers (cimetidine 300 mg q 6 h p.o. or hours; dephenhydramine 50 mq q 6 h p.o. for 24 ours).

The procedure is done under general anesthesia. It is sential that the anesthetist and all concerned *must* be ell informed about:

1. detailed product information about chymopapain, id the prevention, and
2. treatment of an anaphylactic reaction,[4] which may ccur in one percent of the patients.

ie Procedure

At St. Joseph's, the procedure for both orthopedic and eurological surgeons are scheduled with the Barrow eurological Institute Operating Sections's secretary xtension 3451), and anesthetist is engaged, and supersion is required on the surgeon's first case, by an rthopedist for an orthopedic surgeon and by a eurological surgeon for a neurosurgeon. Before heduling, the surgeon is obliged to provide the OR urse or the Joint Committee with a certificate of having ken an approved course in Intra-discal Therapy. The cords are maintained by the Barrow Neurological stitute Operating Room Staff and by the Joint ommittee and reviewed periodically. The surgeon's es amount to approximately 80% of the cost for the pen operation. A 5 ml bottle containing 10,000 units of the enzyme, costs the hospital $525. The patient is charged 20% to 35% more than this amount.

Results of Intra-discal Therapy

Worldwide, the failure rate for chemonucleolysis ranges from as high as 45% to 10% or lower. With experience, surgeons can perform the total procedure in about 45 to 60 minutes and the needle insertion in about 10 to 15 minutes. With careful selection of patients, only about three percent of procedures will fail and require open operative surgery. The period of hospitalization for intra-discal therapy with chymodiactin is two to four days, in comparison to three to four days for lumbar microdiscectomy and seven to eight days for other discectomies.

The St. Joseph's Joint Orthopedic-Neurosurgical Intra-discal Committee plan to review and to report the results of lumbar disc procedures, (intra-discal as well as discectomy) following the first year of experience with the injection therapy. Meanwhile, other enzymes are being developed to dissolve the collagen, another protein in the disc pulp, rather than the mucoprotein, hoping to avoid allergic reactions and other complications.

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Psychiatric Disorders

Group Treatment for Female Sexual Dysfunction

Lillie Weiss, Ph.D.
Rosalyn Meadow, Ph.D.

Editor:
Thomas E. Bittker, M.D.

Abstract

A group treatment method based on Lonnie Barbach's approach and designed for women who either never or seldom experience orgasm or have a lack of desire is described. The treatment is a carefully scheduled desensitization approach to reaching orgasm, consisting of eight weekly sessions. It is a combination of discussions, education about female anatomy and behavior modification techniques. A review of the outcome literature provides support for the efficacy of group treatment of female sexual dysfunction. This approach is both expedient, effective and relatively inexpensive.

Introduction

Research indicates that large numbers of women do not experience orgasm consistently, and a considerable number report dissatisfaction with sex. Several studies[1-4] indicates that about 30% of their samples of married women either never achieve orgasm or do so only occasionally. As recently as 1972, Hunt[5] found that 47% of married women did not consistently experience orgasm and 7% of these women had never responded orgasmically. Additionally, clinical reports by Kaplan[6] and LoPiccolo[7] indicated a prevalence of lack of sexu desire in women.

Traditionally, female orgasm dysfunction was treate by psychoanalytically oriented therapy[8] which too three to five years to produce a "cure" rate of 25%. Late Masters and Johnson[9] used conjoint sexual therapy in a intensive two week program using behavior mod fication techniques. Although this had an 83% succe rate, it was costly and excluded women who had n partners or whose partners were unwilling to participat in the therapy.

To overcome these obstacles, Dr. Lonnie Barbach developed a group treatment which did not enta working directly with a partner, using a combination o group therapy techniques and the desensitization program outlined by LoPiccolo.[7] Her research finding indicated that 92% of the group participants becam orgasmic by the end of treatment. She called thes groups preorgasmic groups because she believed that a women could become orgasmic, and her book *Fo Yourself* [11] reflects her philosophy that a woman ca learn to have an orgasm for herself rather than to pleas anyone else. Barbach treats the orgasm as a learne response, devoid of all judgmental meanings. The mai focus of therapy is to detach this response from i emotional connotations.

Clinical reports indicate that womens' cultural conditioning results in fears, false expectations and misinformation about sex. False expectations that sex come naturally or that the man is the authority on sex hav precluded women from learning how to achieve thei own sexual satisfaction. Other misconceptions such a orgasm should occur through intercourse alone or that woman should have her orgasm at the same time as he partner have left many women feeling sexuall inadequate. In addition, feelings of repulsion an disgust about their genitalia often inhibit sexua responsivity. Another fear is that they will lose thei femininity and look ugly while they are having a orgasm and repulse their partner. Novels depictin women losing consciousness, fainting and screamin during sexual activity can lead to the fear of losin control during orgasm. Other women worry tha becoming orgasmic with a partner means that they wi be completely dependent on him and thus mor vulnerable.

A source of sexual misinformation has been Freud's stance that there are two types of orgasm, vaginal an clitoral. The clitoral orgasm was presumed to reflec neuroticism and immaturity as opposed to the "norma and healthy" vaginal orgasm. Scientific evidence[12] indicates that there is only one kind of orgasm, its sourc being in the clitoris. Cultural role-scripting teache women to be "nice" girls which means not being sexua and guarding their reputation at all costs. Parent reinforce this attitude by seldom discussing sex except t warn against it. They also discourage masturbation thereby keeping their daughters ignorant about source of sexual pleasure. Societal attitudes about femininit

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From: Department of Psychiatry and Behavioral Sciences, Good Samaritan Medical Center, Phoenix, Arizona. Reprint requests to Lillie Weiss, Ph.D., Department of Psychiatry and Behavioral Sciences, R-105, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona 85006.

lso teach women to be undemanding sexually and to concern themselves mainly with their partner's sexual pleasure.

Method: The Group Treatment Program

This group treatment program is a modification of Barbach's approach and designed for women who either never or seldom experience orgasm or have a lack of sexual desire. Patients are generally referred to the groups by their gynecologist, family practice physician, or psychotherapist. A significant number are self-referred or call at the insistence of their partner. An nitial interview is held with each potential group member to assess whether she would benefit from group therapy. A diagnosis of primary or secondary anorgasmia or lack of sexual desire is obtained through a clinical evaluation and brief sex history. Sometimes, patients believe that they are anorgasmic because they do not achieve orgasm through intercourse but can climax through manual or oral stimulation. For these women, specific suggestions for shifting the orgasmic response to coitus are given by the therapist. Other patients reporting vaginismus or dyspareunia are reerred for a medical examination and are generally seen ndividually for treatment. In addition, patients are screened for depression, as well as serious characterological and relationship problems which would nterfere with their ability to benefit from the group process. In these cases, individual or relationship psychotherapy is suggested. For women who report a ack of sexual desire, information about drug and alcohol usage is essential to assess their role in the dysfunction.

Patients for whom group treatment is indicated are asked to read Lonnie Barbach's book *For Yourself* which is available in paperback in most bookstores. The therapist also orients each woman to the group treatment program, answers questions and prepares and desensitizes to the masturbation assignments.

Careful screening and clear orientation can prevent any untoward results and failures. Failures may occur when the sexual dysfunction is a symptom of a deeper characterological or relationship problem or depression. Careful assessment of these factors in the initial nterview can help screen out these individuals.

The groups are usually composed of six members and two trained female therapists and meet for eight weekly sessions and one follow-up session. In addition to attending the group sessions, each woman is expected to do three hours of homework assignments weekly, which are a carefully scheduled desensitization approach to reaching orgasm. The treatment is a combination of group discussions, education about female anatomy and behavior modification techniques.

The first three sessions are geared to have the women become more comfortable with their bodies. This is followed by a masturbation program, and the later sessions are spent in helping women become more consistently orgasmic and transferring this behavior to the partner relationship.

In the first session, women find out that they are not alone in their problem by discussing their sexual histories and feelings about being anorgasmic. The first homework assignments are designed to help women become comfortable with their bodies. The Body Mirror Exercise encourages women to look at their body as if for the first time and to explore it from all angles and positions. This is followed by the Body Touching Exercise. Using lotion or oil, they experience how it feels to touch and be touched. These are always done in a relaxed, comfortable private setting. These exercises help women overcome poor body image which can inhibit sexual responsivity.

The second session focuses on the anger women have at being anorgasmic. They are generally angry at their mothers for not providing information about sex or at their partners for not satisfying them. Only after the anger is expressed can women direct their energy to becoming responsible for their own behavior. To help them ameliorate their anger, they are asked to talk to their mothers and find out what she was told about sex and contraception. This generally changes the anger to understanding.

The second session also focuses on the feelings of disgust and repulsion women feel about their genitalia. Pictures of female genitals are shown to bring these feelings to the surface. Slides are shown of the anatomy and physiology of the sex response cycle to demonstrate the physical and psychological changes that are necessary to produce orgasm. For their homework, women are first asked to examine their genitals visually, using a hand mirror, and then to explore them manually. For further desensitization, they are asked to draw a picture of their genitals and to bring it to the group.

In the third session, the therapists dispel myths about masturbation and provide members an opportunity to discuss their childhood experiences and current fears. A film of a woman masturbating is shown to desensitize and to teach group members. For their homework, women are asked to masturbate, using oil, saliva or a lubricant. This is a lesson in self-discovery where the woman is in control of her responses without intrusion from her partner.

In the following sessions, the therapists' role is to help women overcome blocks to achieving orgasm. If a woman feels nothing while masturbating, there are three main ways to help her: fantasy, pornography and concentrating on sexual sensations. If, on the other hand, a woman's feelings are too intense, she is encouraged to go slowly, at her own rate, or to use "teasing" which is stimulating herself up to a point and then stopping. Sometimes a woman is asked to role-play an intense orgasm to alleviate the fear of being out of control.

By working through their fears, women are usually able to reach orgasm by the fifth or sixth sessions. The rest of the group time is spent in helping them achieve orgasm more consistently and in transferring their response to the partner relationship.

Some bridging techniques for transferring the orgasm response to sexual intercourse with a partner include masturbating in front of him to show him what she wants. Intercourse with the woman on top where she can control thrusting and while stimulating herself clitorally help her reach organsm during coitus. Using the Kegel exercise during sex also works to increase sexual arousal levels and produce orgasm.

In addition to sexual exercises, the therapists provide assertiveness training and effective communication skills. These skills enable women to express their needs to their partners and generally enhance the couple's ability to "open up" to each other.

Results

A review of the outcome research[13] generally provides support for the efficacy of group treatment of female orgasm dysfunction in fostering changes in orgasmic frequency as well as other sexual and nonsexual areas of functioning. Most treatment gains in the studies were maintained through follow-up periods ranging from six weeks to one year after treatment termination. For primary anorgasmia, success rates are very high, generally ranging from 90% to 100%.[10,14,15] For situationally orgasmic women, the success rates have also been high. Barbach and Flanherty[16] reported a 66% success rate for situationally orgasmic women. Treatment success was defined as unspecified increases in orgasmic frequency with a partner, in percentage of increase in orgasm, and the number of ways in which they could reach orgasm with a partner.

Of the sixteen studies reported in the literature review, five included either a waiting list control group or a baseline control period. Sotile and Kilmann[17] isolated the specific effects of group systematic desensitization on the sexual and marital functioning of nonorgasmic women. The subjects in this study served as their own controls for a baseline period of five weeks before starting treatment. The results showed a significant reduction in sexual anxiety and a significant increase in overall couple satisfaction, the degree of pleasure experienced during intercourse and noncoital stimulation by the partner, and the frequency of orgasm during noncoital partner stimulation. These effects were maintained over a six-week follow-up period.

Nemetz et al.[18] evaluated the effects of graduated symbolic modeling in the treatment of women with severe sexual anxiety. Eight women were assigned to group symbolic modeling, and six were assigned to a waiting list control group. Positive treatment effects for the subjects receiving group modeling were found on measures of sexual anxiety, attitudes and behavioral enactment. The waiting list control group showed a trend toward deterioration on the same measures.

Discussion

There are three basic elements accounting for the success of the program: the group process, the qualities and skills of the leaders, and the desensitization techniques. In the group sessions, women realize that they are not alone in their problems and that they can talk about their negative and shameful feelings about sexuality. They also support each others' progress and instill hope in their ability to become orgasmic. The all-female membership of the group also awakens women to the strengths that lie within themselves.

The group leaders give women permission to be sexual and support them in a caring manner. In their roles as technical authorities and role models, they help reverse the messages most women have received as they were growing up.

The desensitization techniques are essential for the program's success. The approach is based on the behavioristic method of overcoming a symptom—in this case, anorgasmia—through a process of graduated steps. The first steps are easily accomplished and produce little anxiety, and the later steps are more anxiety producing.

Conclusions

The large number of women who experience orgasmic dysfunction necessitates the need for a treatment method that is brief and relatively inexpensive. The group treatment program described in this paper can meet these needs. In addition to being expedient and effective, it offers women the support and sharing necessary to foster desired changes.

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Radiology

Case of the Month No. 68

Gene Babbitt, M.D.
Tim B. Hunter, M.D.

Editors:
Jonathan M. Levy, M.D.
Janice Rice, M.D.

A 37-year-old lady had an excretory urogram (IVP) for gynecological problems not related to this case. She was otherwise healthy. A plain film of the abdomen was obtained prior to the IVP. (Figure 1).

What are the plain film findings?

What question(s) would you like to ask the patient?

What other test(s) would you like to perform?

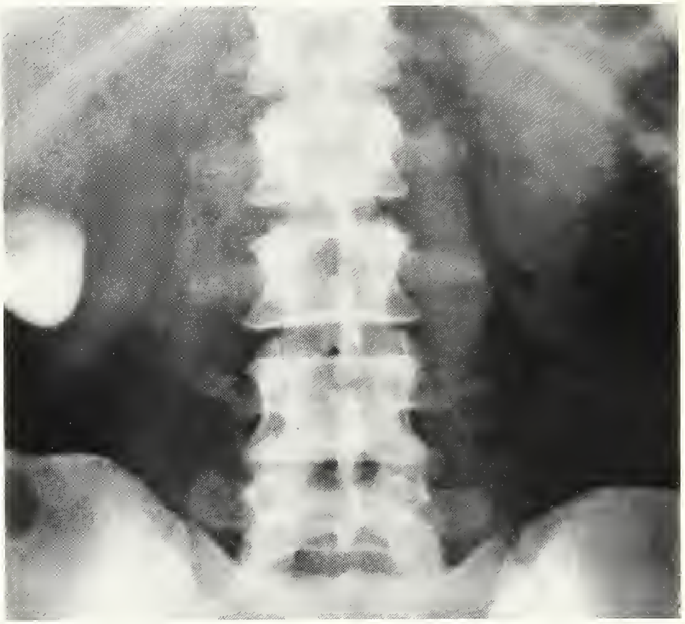

Figure 1

Continued on Next Page

From: Department of Radiology, University of Arizona Health Sciences Center, Tucson, Arizona. Reprint request to Gene Babbitt, M.D., Department of Radiology, University of Arizona Health Sciences Center, Tucson, Arizona 85724.

Radiology Continued

Answer: Milk of calcium bile (limy bile)

Milk of calcium bile was first described in the early 20th century by Volkmann and Churchman. The dense material seen in this patient's gall bladder (Figure 2) represents calcium carbonate, or less often calcium phosphate or calcium bilirubinate. Though this is not a rare finding, fewer than 100 cases have been reported in the literature. Since opaque contrast material has the same appearance as milk of calcium bile, it is important to ask the patient if she has had a recent oral cholecystogram.

The mechanism of formation of milk of calcium bile is unknown, but it is thought to be secondary to precipitation of bile in an obstructed gallbladder. Other theories suggest secretion of the material by an abnormal gallbladder, or formation as a product of abnormal liver function. Cystic duct stones are present in 75% of cases, and most authors agree that some form of cystic duct obstruction is present in all cases. Some patients have an unusually long cystic duct, and nine cases have been reported associated with jaundice. Most patients are elderly females, the female to male ratio being 7:1. Spontaneous passage of limy bile is not infrequent, and is probably as common as spontaneous passage of gallstones.

Radiographic findings include: 1) gallbladder visualization without prior administration of contrast, 2) a fluid level in the gallbladder due to calcium containing bile gravitating to the dependent part of the gallbladder, 3) persistence of gallbladder visualization long after cholecystography (assuming no scout radiograph was performed), 4) at times, an opaque ring appearing at the anatomical site of the junction of the gallbladder and cystic duct where limy bile surrounds a gallstone prior to its impaction in the cystic duct, and 5) rarely, the "exclamation mark" sign, represented by limy bile within the common duct, with a stone distally at the ampula of Vater.

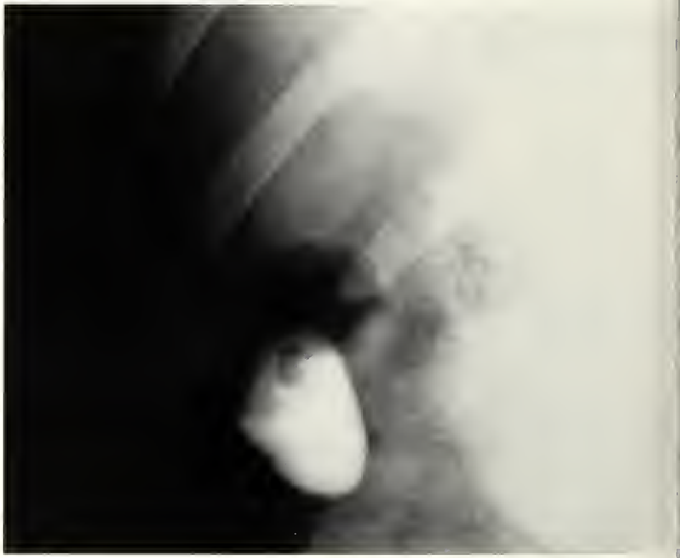

Figure 2

Some patients present with symptoms of right upper quadrant pain, sometimes colicky, flatulence and jaundice. Others may be asymptomatic. Our patient did not receive any further workup or treatment, since she had no symptoms relating to the gallbladder.

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Special Article

Social Vulnerability or Responsible Preparedness? Physicians and Nuclear War

Jane M. Orient, M.D., F.A.C.P.

Abstract

Prevention is a focal point in public concerns about medicine today, yet demands that we dispense with our therapeutic armamentarium are so far restricted to discussions about nuclear war. Organized medicine has opposed civil defense measures that might save millions of lives. Both the logic and the ethics of this position should be reexamined.

Key Words: Civil defense, ethics, medical disaster planning, nuclear warfare.

Why should physicians prepare to treat the sick and the injured, if civilization will be a heap of radioactive rubble?

Believing the world to be in grave danger of nuclear war, in which everything worth fighting for would perish even if humanity did not actually become extinct, some physicians have abandoned their medical practices to become activists for peace. Others devote part of their time to preventing war as members of Physicians for Social Responsibility (PSR), the fastest growing group of physicians in the world. This organization has about 11,000 members, including 150 in southern Arizona.

The viewpoint espoused by PSR has been widely promulgated in the medical literature, and is well summarized in the book *The Final Epidemic: Physicians and Scientists on Nuclear War*,[1] which has been called essential reading for all physicians,[2] and an inspiration for many to join the ranks of PSR.[3] Education about the horrors of nuclear war is the first step toward persuading those in power to adopt conciliation instead of warfare as a means of settling disputes. Since the worst case scenario is believed to be inevitable, prevention is the only thinkable course of action. Citing the bond of the Hippocratic Oath, the First Congress of the International Physicians for the Prevention of Nuclear War concluded that "no response to medical needs should be expected from medicine" in the aftermath of a nuclear conflict (1, p. 238).

The Tucson chapter of PSR has undertaken a variety of preventive measures. The group supports demonstrations and vigils against the cruise missile at Davis Monthan Air Force Base. Members placed petitions for the nuclear freeze and reading materials about the dangers of the MX missile in their waiting rooms. Important lectures by activists such as Daniel Berrigan and members of the European peace movement are publicized. T-shirts are for sale, in green or burgundy, with the message "You Can't Hug Your Kid with Nuclear Arms." One member teaches a new elective for medical students about the consequences of nuclear war. On a field trip to a missile silo, 27 students viewed a decommissioned missile on a flatbed truck; they were said to have been duly impressed.[4] A speakers bureau provides outreach to schools, churches, and community organizations. Since PSR believes our current cultural malaise and alienation results from the shadow of the Bomb,[1] it seeks to overcome "psychic numbing" by frightening school children. Many of the children have nightmares. A few express a naive hope: "I know that there won't be a nuclear war because my daddy goes to meetings all the time to prevent it."[5]

The political assumptions underlying the PSR program are quite clear. The United States is a militaristic power, led by men who probably belong in an insane asylum.[1] Helen Caldicott, national president of PSR, states in her book *Nuclear Madness: What You Can Do!*, which was purchased in bulk by the Tucson chapter, that "I look them in the eye and tell them that their [US] government is totally responsible for organizing this calamity" (6, p. 70). The president of the Chicago chapter, Dr. Richard Gardner, characterized people who argue for strengthening U. S. defenses as one of three types: 1) those of the "Weinberger mentality," 2) ideologues, 3) those who profit from defense procurements. "The window of vulnerability is between our leaders' ears,"[7] he said. Much documentation is distributed, mostly editorials from various newspapers, such as one from *Workers World* entitled "The Big Lie of germ warfare: Haig poisons facts." Pamphlets displaying weapons statistics have footnotes from the Union of Concerned Scientists, the Council on Economic Priorities, the Center for Defense Information, and the Institute for Policy Studies, all of which have consistently opposed U.S. defense expenditures. The assertion that this organization represents a broad spectrum of political opinion is not persuasive.

While medicine strives to prevent illness whenever possible, the "final epidemic" of nuclear war appears to be the only one in which prevention and treatment are actually considered incompatible. No one images that coronary care units interfere with efforts to prevent myocardial infarctions, or that forbidding the use of cancer chemotherapy would encourage people to stop smoking. Furthermore, no one proposes to withhold treatment which is only partially effective. Yet, civil defense is dismissed with arguments analogous to these. Either it is "virtually useless"[1] or a "cruel hoax"[7] which prevents prevention, or it is actually dangerous, in that it might increase the chance of war.[8] The contradiction in these statements does not seem apparent to PSR speakers. National PSR leads the opposition to the Civilian-Military Contingency Hospital System, on the grounds that it is inadequate, since they believe that any war between the superpowers would escalate to all-out holocaust.[9] On the other hand, an all-out civil defense effort is opposed just as strongly, often by the technique of ridiculing those who claim we could save millions of lives "with enough shovels."

Shovels might indeed suffice to dig expedient fallout shelters, a job even female American college students have been able to accomplish.[10] The reason for such self-reliance, using primitive technology, is our government's neglect of its primary constitutional responsibility to provide for the common defense. The United States spends about $0.50 per capita annually on preparedness for all disasters, including natural ones. In contrast, the Soviet Union spends between $8 and $20 for civil defense, and Switzerland about $10.85.[10] In a Swiss public shelter, people could survive the blast of a one megaton explosion as close as 0.9 mile to ground zero. At present, shelter space is available for 85 percent of the population, and by 1990 should be sufficient for all.[11]

Organized medicine has generally been receptive to the message of PSR. The American Medical Association House of Delegates rejected a report that called for civil defense efforts.[12]

From: 1601 North Tucson Boulevard, Suite 9, Tucson, Arizona 85716.

The American College of Physicians accepts the concept that there is no medical response to nuclear war,[13] and with its endorsement PSR distributes materials at regional meetings of the College.

The morality of this opposition to civil defense has been challenged. A new organization called Doctors for Disaster Preparedness states the principle that physicians have the obligation to care for the survivors of any catastrophe, regardless of its cause or its magnitude, and that, moreover, advance preparations are an ethical imperative. The California Medical Association recently took a similar position in a resolution which reversed its previous policy:

California Medical Association Nuclear War Preparedness—Resolution No. 1783

Whereas: The thought of human destruction from nuclear war is appalling. And whereas, the present CMA position is that the only defense against nuclear war is prevention,

And whereas, the CMA preoccupation with prevention has resulted in total lack of preparation for the unthinkable, should it occur,

And whereas, nuclear war could well occur during this generation, because—

1) The good deeds and intentions of the major powers will not necessarily control other nations,

2) Dozens of minor and irresponsible nations now have access to weapons grade plutonium,

3) The United States has practically no defense against nuclear attack except for the threat of retaliation,

And whereas, a nuclear explosion or war does not mean the end to all life . . .,

And whereas, the exploding of one nuclear weapon does not automatically mean that all other nuclear devices will inevitably be exploded,

And whereas, it is likely that even after an all out nuclear war there will be many pockets of survivors who are relatively unscathed,

And whereas, it is appalling that organized medicine has not prepared plans to assist these survivors,

Be it therefore resolved: that the California Medical Association will work with state authorities in developing statewide contingency plans for dealing with the medical consequences of a limited or all out nuclear war.[14]

In deciding how to respond to the threat of nuclear war, physicians must face both a practical and a moral question. Practically, they must explore the effective ways to prevent war: specifically, can catastrophe be averted by assuring vulnerability? Morally, they must choose between two conflicting interpretations of the Hippocratic Oath. Under present circumstances, should we, despairing of a cure, renounce medical treatment altogether and place our faith in political prevention? Or should we, recognizing the limits of prevention, stand ready with palliation for the victims of any disease, even the "final epidemic"?

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Editorials

Hi Mom!

It was that time of month again, time to call my parents long distance in Miami Beach. I try to postpone these calls as long as possible, but eventually the guilt overtakes me and results in a semi-monthly phone call. On this occasion unfortunately I did not get the answering machine but, my Mother.

"How are things going?" started the conversation, and my Mother took it from there. I must say she is basically a simple woman who has worked hard her whole life and is now at age 75 just beginning to enjoy relaxation. Born in Europe, coming here as a child, etc., has produced a person who is strong, knows right from wrong and tends to see things pretty black and white.

I was not surprised therefore to have the conversation start with, "Did you hear about your Uncle Phil?" "Yes, Mom, I heard he died, how is Aunt Martha (his wife)." "She's doing fine, but you know, she didn't really love him even though they were married 57 years."

She then entered into the second phase of the conversation which forms the basis of this editorial. "Did you know that they kept him alive an extra three weeks? They got a bill for over $120,000.00 from the hospital and over $50,000.00 from all the doctors they called in to take care of him at the end? They just did it to make money!"

With further questioning, the "they" referred to the hospital and the doctors. "They should have let him die three weeks earlier and saved everyone all that money." It was at this point that I was tempted to say. "Goodbye, Mom," but held on to attempt a bit of education, for I felt as a physician's mother, she should at least hear the other side and perhaps transmit it to some of her cronies in this condomimium complex in the Hotbed of Retiredom.

I tried to explain to her that the decision to let a patient die is a difficult one that has to be made not only by the physician, but in concert with the family. "Did they ask Martha whether she wanted all those things done at the end to keep him alive?," I asked. "Of course they did, and of course she told them to do whatever was necessary to keep him going." "They held out the carrot that he may get better, he may improve, he may live. How could anyone say, stop?"

I then asked two further questions which made the situation even more confusing. "Would you be complaining about the cost if he lived? And what are you going to do if the same thing happens to Dad?" At this point, her answers got a little fuzzy, but the gist of it was it still was expensive even if he lived, and of course she would do the same thing if she was in my Aunt Martha's place.

The moral of the above conversation is that the public perceives physicians as making a living keeping people alive and will do everything in their power to do so regardless of clinical situations. Furthermore, the public wants physicians to act as an ultimate authority under certain circumstances, but under other circumstances, chastise them if they do.

Thus, an educational effort on the part of physicians to help the public understand its responsibilities in ethical decision-making processes is fraught with a great deal of difficulty. It would appear that an outside neutral party is going to be necessary to help resolve these difficulties. All we can hope to do is to try our best to discuss the problems with patients and families when the situation occurs.

I guess I'm just going to have to swallow hard next time my Mother says, "Why don't you call me more often?"

Marshall B. Block, M.D.
Editor

"Prospective Payment, DRG's and Education"

The stresses of declining federal aid to education, losses of support for biomedical research, and the pro-competition economic health care environment are taking their toll on medical education. Comes now prospective pricing and payment based upon the unknown of diagnosis related groups (DRG's). The intent clearly is to control spending for health care but also to control spending for research, development of new technologies, and health manpower as well.

Whether this new approach is economically sound only time will tell. It is quite possible that the effects may be deemed successful in the short-term but produce long-term lasting effects which will not be recoverable.

Few would argue that new treatment and diagnostic technologies are expensive, especially in the short-term. In the long-term, however, small pox and polio immunizations, insulin, and even computerized tomography have not only promoted health and well being but have been shown to be cost efficacious as well. The price we may well pay for any anticipated short-term gain through the new approach is a loss of scientists to develop new approaches, and a declining number, or even shortage, of providers to utilize such approaches.

In March 1983, Congress established the Medicare prospective payment (pricing) system. The phasing-in period beginning in October 1983 will introduce a revolutionary approach to payment for health services. No longer will payment be made in retrospect for services rendered. This previous approach allowed teaching hospitals and colleges of medicine to develop highly specialized services, obtain the most advanced technology, and regularly expand teaching/research clinical programs. The new system removes this traditional financial incentive to develop in this progressive manner.

While initially the prospective payment system focuses on inpatient services (where the largest amount of teaching occurs) and emphasizes the Medicare eligible population, it is quite likely it will soon be applied to ambulatory activities and all third party paid services. Hence, all aspects of the teaching and research function of academic medical centers will be at risk.

No one in academia should oppose a sound cost efficient system of financing health care, but there are inherent problems created by the prospective payment system. This will be most apparent if the costs peculiar to education and research are not adequately recognized and addressed. The generic problem with the prospective payment system is the prospect of pricing cost by diagnosis related groups (DRG's).

Following a three year transition period, the DRG system will pay hospitals (and perhaps eventually all providers) a fixed payment per patient discharge which will vary only by the DRG into which the patient's clinical condition and care falls. Payments for the 467 DRG's containing all the 11,828 diagnoses and 30,000 procedures currently coded in the International Classification of Diseases will be based upon the average cost of caring for a patient in each of the DRG's throughout all of the nation's 6,000 or more hospitals. Despite the adjustments to be made for urban versus rural wages and the more costly "outliers", the underlying averaging concept will operate to the disadvantage of most teaching hospitals which have disproportionate numbers of critically ill patients with complex problems.

According to Colloton,[1] academic medical centers are especially vulnerable. First, the prospective payment system fails to recognize adequately the costs incurred by producing a broad array of societal benefits beyond the care provided to patients. Second, there is wide disparity among teaching hospitals themselves in basing operating parameters such as operating-costs-per-admission, staffing ratio-per-occupied-bed, expenditures for nonsalaried-cost-per-bed, and average lengths of stay.

Academic medical centers are producers of multiple products that benefit not only the individual patient but all of society. Some of these products are graduate medical and other health professional education, new technology testing, clinical research, substantial amount of charity care, highly specialized services, and extensive ambulatory care programs operating on a subsidized basis. Generation of these multiple products, the "societal contributions"[1] necessarily results in higher costs almost always reflected in teaching hospital patient charges. Congress has recognized this role to some extent by including payment for direct educational costs as well as some adjustment for indirect educational costs. Whether the adjustments are realistic and whether they will stand the test of political scrutiny and attack over time is unclear. First, because it is derived arbitrarily. Second, the sum is remarkedly large and undelineated. Finally, and importantly, it is highly visible with its formulation unsupported by a strong quantitative basis.

Some of the wide disparity among teaching hospitals may be justifiable. However, much is not. Colloton,[1] suggests, the disparities are the consequences of differing financial allocation decisions among the intermingled missions of patient care, teaching, and research; different styles and patterns of medical practice; varying degrees of managerial sophistication; and many other variables which will have to be addressed.

It is essential that academic medical centers respond to this system in a positive and constructive manner. Unlike previous efforts of society to control costs, the DRG system and its payment formula are linked to specific dollar curtailments in the growth of federal health care expenditures. Hence, there will be control of costs.

The proper posture for academic medical centers is to work collectively on the national scene to refine the DRG system and the enabling legislation. Secondly, the individual academic medical center will have to focus on internal operations. Faculty and learners must understand the new payment system including its different incentives and must work to develop and adopt medical practice protocols that limit the resources consumed on behalf of each patient to that which is essential for quality patient care. The clinical teaching staff will have to adjust to the new reality that only a fixed amount of resources based on national averages is available for the diagnosis and treatment of individual patients. Under the new system, additional services will actually consume revenue rather than increase it. It will be important to convince faculty members that quality patient care can be maintained under the new financing system.

Critical will be an awareness of the intimate and interdependent relationship of medical colleges, teaching hospitals, educators, managers, and indeed providers and patients. Other challenges have been met. This too can be accomplished with our best collective effort.

Louis J. Kettel, M.D.
Dean
College of Medicine

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In vitro studies demonstrate

Bactericidal activity

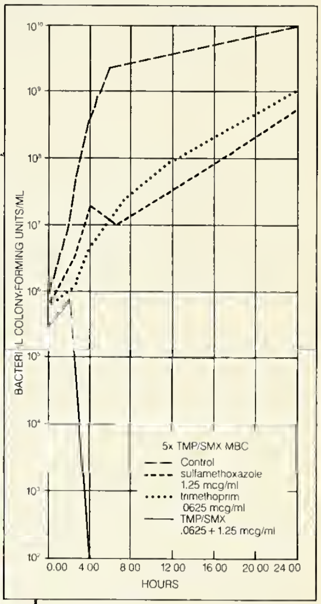
with minimal resistance

Percent of isolates of common uropathogens sensitive to BACTRIM and to other antimicrobials

	Escherichia coli	Klebsiella pneumoniae	Proteus mirabilis	Proteus vulgaris	Proteus sp.	Enterobacter sp.	Enterobacter aerogenes	Enterobacter cloacae
BACTRIM	**96%** 328,598	**89%** 63,551	**93%** 62,691	**84%** 4174	**91%** 4381	**88%** 1736	**96%** 7326	**92%** 11,856
ampicillin	72% 345,209	5% 65,466	85% 67,338	16% 4381	70% 4402	10% 1775	9% 7759	11% 12,091
cephalexin†	81% 343,339	85% 67,031	92% 67,027	16% 4398	80% 4365	22% 1834	13% 7571	12% 11,846
nitrofurantoin	97% 307,785	65% 61,162	7% 59,775	13% 3848	14% 3059	67% 1707	60% 7109	67% 10,830

†Analogous to cephalothin, the primary antibiotic disc used in testing.
Source: The Bacteriologic Report, BAC-DATA Medical Information Systems, Inc., Winter Series, 1981-82.
Numbers under percentages refer to the projected number of isolates tested.

RAPID *IN VITRO* DESTRUCTION OF *E. COLI**



Kill curve kinetics of Bactrim and its individual components against *E. coli in vitro.*[1]

The bactericidal action of Bactrim has been demonstrated *in vitro* on laboratory strains of *E. coli*[1,2] and on clinical isolates of *E. coli, Klebsiella-Enterobacter, Proteus mirabilis* and *Morganella morganii*[3]—the most common causative organisms of urinary tract infections.[4] More than 100 published studies attest to the efficacy of Bactrim in recurrent urinary tract infections due to these organisms.[5] In comparative studies with other antimicrobials, Bactrim has consistently demonstrated unsurpassed efficacy during therapy.[6-11]

Resistance to Bactrim develops more slowly than to either of its components alone *in vitro.** Among urinary tract isolates, resistance has rarely emerged in susceptible strains.[5,12] Bactrim is contraindicated in pregnancy at term, during lactation, in infants less than two months old and in documented megaloblastic anemia due to folate deficiency.

Initial episodes of uncomplicated urinary infections should be treated with a single-agent antimicrobial.

Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

b.i.d. *for recurrent urinary tract infections*

**In vitro* data do not necessarily predict clinical results.

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See next page for references and a summary of product information.

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **2.** Kramer MJ, Mauriz YR, Robertson TL, Timmes MD: Morphological studies on the effect of subinhibitory and inhibitory doses of sulfamethoxazole-trimethoprim combination on *Escherichia coli.* Presented at the 12th International Congress of Chemotherapy, Florence, Italy, Jul 19-24, 1981. **3.** Spicehandler J *et al: Rev Infect Dis 4*:562-565, Mar-Apr 1982. **4.** Stamey TA: *Pathogenesis and Treatment of Urinary Tract Infections.* Baltimore, Williams & Wilkins, 1980, p. 13. **5.** Ronald AR: *Clin Ther 3*:176-189, Mar 1980. **6.** Cooper J, Brumfitt W, Hamilton-Miller JMT: *J Antimicrob Chemother 6*:231-239, 1980. **7.** Gower PE, Tasker PRW: *Br Med J 1*:684-686, Mar 20, 1976. **8.** Cosgrove MD, Morrow JW: *J Urol 111*:670-672, May 1974. **9.** Iravani A *et al: Antimicrob Agents Chemother 19*:598-604, Apr 1981. **10.** Schaeffer AJ, Flynn S, Jones J: *J Urol 125*:825-827, Jun 1981. **11.** Rous SN: *J Urol 125*:228-229, Feb 1981. **12.** BAC-DATA Medical Information Systems, Inc., Bacteriologic Reports, Winter Series, 1976-82.

Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii.* It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, hepatocellular necrosis, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients. *Pregnancy:* Teratogenic Effects: Pregnancy Category *C*. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, hepatocellular necrosis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: *Not recommended for infants less than two months of age.*

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 20. *Tablets,* each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. *Pediatric Suspension,* containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension,* containing 40 mg trimethoprim and 200 mg sulfamethoxazole per tea spoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

References:

1. Stone PH, Turi ZG, Muller JE Efficacy of nifedipine therapy for refractory angina pectoris *Am Heart J* 104 672-681, September 1982
2. Antman E, Muller J, Goldberg S, et al: Nifedipine therapy for coronary-artery spasm Experience in 127 patients. *N Engl J Med* 302 1269-1273, June 5, 1980

BRIEF SUMMARY

PROCARDIA® (nifedipine) **CAPSULES** For Oral Use

INDICATIONS AND USAGE: **I. Vasospastic Angina**: PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria 1) classical pattern of angina at rest accompanied by ST segment elevation, 2) angina or coronary artery spasm provoked by ergonovine, or 3) angiographically demonstrated coronary artery spasm In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e g where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and/or adequate doses of beta blockers

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA

WARNINGS: **Excessive Hypotension**: Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated occasional patients have had excessive and poorly tolerated hypotension These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and, if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery

Increased Angina: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina probably related to increased sensitivity to catecholamines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure: Rarely patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS: **General**: **Hypotension**: Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested Close observation is especially recommended for patients already taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuretic therapy With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers The average increase was 45% Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis mutagenesis, impairment of fertility When given to rats prior to mating nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity in rats embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication Additionally the following have been reported muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients It remains possible, however, that some or many of these events were drug related Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK LDH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy is uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature

HOW SUPPLIED: Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72) and unit dose (10x10) (NDC 0069-2600-41) The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container

More detailed professional information available on request

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LABORATORIES DIVISION
PFIZER INC

"I can do things that I couldn't do for 3 yrs. including joining the human race again."

Quotes from an unsolicited letter received by Pfizer from an angina patient.
While this patient's experience is representative of many unsolicited comments received, not all patients will respond to Procardia nor will they all respond to the same degree.

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"My daily routine consisted of sitting in my chair trying to stay alive."

"My doctor switched me to PROCARDIA[*] *as soon as it became available. The change in my condition is remarkable."*

"I shop, cook and can plant flowers again."

"I have been able to do volunteer work...and feel needed and useful once again."

PROCARDIA can mean the return to a more normal life for your patients—having fewer anginal attacks,[1] taking fewer nitroglycerin tablets,[2] doing more, and being more productive once again.

Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).

for the varied faces of angina

PROCARDIA®
(NIFEDIPINE) *Capsules 10 mg*

[*] Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
2) Angina where the clinical presentation suggests a possible vasospastic component.
3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Please see PROCARDIA *brief summary on adjoining page.*

Motrin®

ibuprofen, Upjohn

600 mg Tablets

More convenient for your patients

Upjohn

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J-9043-4 July 1981

Briefly Noted

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Marilyn Heins, M.D., Tucson, has been appointed Vice Dean of the University of Arizona College of Medicine. She formerly served as associate dean for academic affairs. Dr. Heins, an associate professor of pediatrics, was also recently appointed to a four-year term on the National Board of Medical Examiners, representing the American Hospital Association. In addition, Dr. Heins serves as a member of the editorial board of the Journal of the American Medical Association.

J. Douglas Morrison, M.D., Tempe, recently completed the advanced course in fertility surgery at the Institute of Microsurgical Techniques in Dallas.

Donald D. Preuss, M.D., Mesa, was profiled in a recent issue of the *Mesa Independent* for his work with Esperanca. Since his return in 1981, Dr. Preuss and his fellow volunteer, Mesa orthopedist **Ronald B. H. Sandler, M.D.**, have given about 20 speeches on the work of Esperanca.

Donald Schon, M.D., Phoenix, has been credited with introducing the new Continuous Arterial Venous Ultrafiltration (CAVU) procedure to Good Samaritan Hospital. CAVU is most useful for the intensive care patient whose kidneys are not functioning properly and whose condition would not tolerate an artificial kidney machine.

Richard A. Thompson, M.D., Phoenix, has been named director of the Barrow Neurological Institute's 14-bed nursing unit dedicated exclusively to the care of stroke and transient ischemia patients.

Mervyn D. Willard, M.D., Phoenix, discussed Nutrition versus Medicine at the June *Health Talk* forum cosponsored by the Arizona Medical Association and Blue Cross/Blue Shield of Arizona. His topic, "Vitamins, Minerals, Which Ones and How Many" elicited a number of questions from the audience. Dr. Willard is the author of the textbook *"Nutrition for the Practicing Physician"* which was reviewed in *Arizona Medicine* in January of this year.

Physicians appearing on the "Health Highlights" cable television program for September are **Phillip Levy, M.D.**, "Diabetes" and **Barry Hendin, M.D.**, "Alzheimer's Disease."

Mervyn D. Willard, M.D., answers a question about nutrition at the June "Health Talk" forum.

The Arizona Medical Association
welcomes the following new members:

Maricopa

Daryl P. Beabeau, M.D.
Radiology
444 West Osborn Road, Phoenix
George Washington University
School of Medicine
and Health Sciences—1976

Carlos R. Garreton, M.D.
Family Practice
1728 West Glendale Avenue, Phoenix
Autonomous University
of Guadalajara—1975

Joseph M. Johnson, M.D.
General Surgery
13000 North 103rd Avenue, Sun City
Pennsylvania State University
College of Medicine—1976

William K. P. Li, M.D.
Orthopedic Surgery
3008 North Third Street, Phoenix
The University of Chicago
Pritzker School of Medicine—1976

Marilyn Medweid, M.D.
Obstetrics and Gynecology
6880 East McDowell Road, Scottsdale
University of Arizona
College of Medicine—1978

Emmet J. Thorpe, M.D.
Orthopedic Surgery
1441 East Buckeye Road, Phoenix
George Washington University
School of Medicine
and Health Sciences—1951

Larry J. Verhulst, M.D.
Orthopedic Surgery
5422 West Thunderbird Avenue
No. 17, Glendale
Medical College of Wisconsin—1976

Mark H. Wilson, M.D.
Family Practice
1256 West Williamsfield Road
Suite No. 31, Chandler
University of South Dakota
School of Medicine—1979

Pima

John Riedler, M.D.
Psychiatry
5190 East Farness, Tucson
University of Nebraska
College of Medicine—1978

Resident Members

Phyllis V. Clark, M.D.
Internal Medicine
University of Arizona
Health Sciences Center

Randy Ensminger, M.D.
Family Practice
Scottsdale Memorial Hospital

Don C. Fisher, M.D.
Occupational Medicine
University of Arizona
Health Sciences Center

Timothy J. Flood, M.D.
Occupational Medicine
University of Arizona
Arizona Center for
Occupational Safety and Health

Gary S. Goldberg, M.D.
Internal Medicine
Maricopa County General Hospital

Fritz M. Karrer, M.D.
General Surgery
University of Arizona
Health Sciences Center

Robert M. Kershner, M.D.
Ophthalmology
University of Arizona
Health Sciences Center

Edmund G. LaCour, M.D.
Diagnostic Radiology
St. Joseph's Hospital, Phoenix

Michael Maricic, M.D.
Rheumatology
University of Arizona
Health Sciences Center

Douglas A. Munro, M.D.
Transitional
Tucson Hospital Medical
Educational Program

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University of Arizona
Health Sciences Center

Teresa A. Reynolds, M.D.
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St. Joseph's Hospital, Phoenix

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Phoenix Integrated
Surgical Residency Program

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Family Practice
Scottsdale Memorial Hospital

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Obstetrics and Gynecology
St. Joseph's Hospital, Phoenix

Beatriz G. Stamps, M.D.
Obstetrics and Gynecology
St.Joseph's Hospital, Phoenix

John Ter-Zakarian, M.D.
Pathology
St. Joseph's Hospital, Phoenix

William J. Thrift, M.D.
Family Practice
Scottsdale Memorial Hospital

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Anesthesiology
3619 North 24th Way, Phoenix
St. Louis University—1980

Student Members

William J. Rifley, III, M.D.
St. George's University
Grenada, West Indies

Susan P. Stumpf, C-PA
Physician's Assistant
University of Wisconsin
Physician's Assistant School—1980

Grant money is available to medical professionals in Arizona who are interested in conducting investigation into cardiovascular diseases. The American Heart Association, Arizona Affiliate, is now offering two grant programs, a Professional Community Involvement Program and a Stipend Program.

The Professional Community Involvement Program, offering a maximum of three projects, each up t $5,000.00, may involve, but is not limited to, clinical research, professional education and informatio and public education and information Applications may be submitted by physicians, registered nurses, and hospitals.

The Stipend Program, offering individual stipends of $1,050.00 is directed to professionals at the graduate or postgraduate level with little or no previous experience in the various fields of cardiovascular research.

Applications must be received no later than January 1, 1984.

For information and application forr contact the

Program Department
Arizona Heart Association
Arizona Affiliate
1445 East Thomas Road
Phoenix, Arizona 85014
Telephone: 277-4846

Correspondence

itor-
I have read with interest your
itorial regarding "The Evolving
ntrol of Medical Care." This column
the most incisive and succinct
position of the problems that the
ysician community faces that I have
ad so far. I do concur with the idea
keeping these issues in the headlines
d editorials as much as possible for
e purpose of maintaining a higher
vel of awareness consistly. In addition,
e idea of some form of "alliance"
th industry is an intriguing one, and I
uld be interested in any comments
at you might have regarding the idea
an alliance with insurance
mpanies, or at least some form of
bbying with insurance companies in
effort to straighten out their
iorities with respect to how willingly
ey reimburse outrageous hospital
sts and how grudgingly they
mburse a lot of doctor costs. In
dition, the case ought to be made
out the exorbitant charges for
rgical procedures—these do not make the physician community look good in the eyes of anyone.

Many thanks for your concern and your efforts.

James L. Frey, M.D.
Phoenix, Arizona

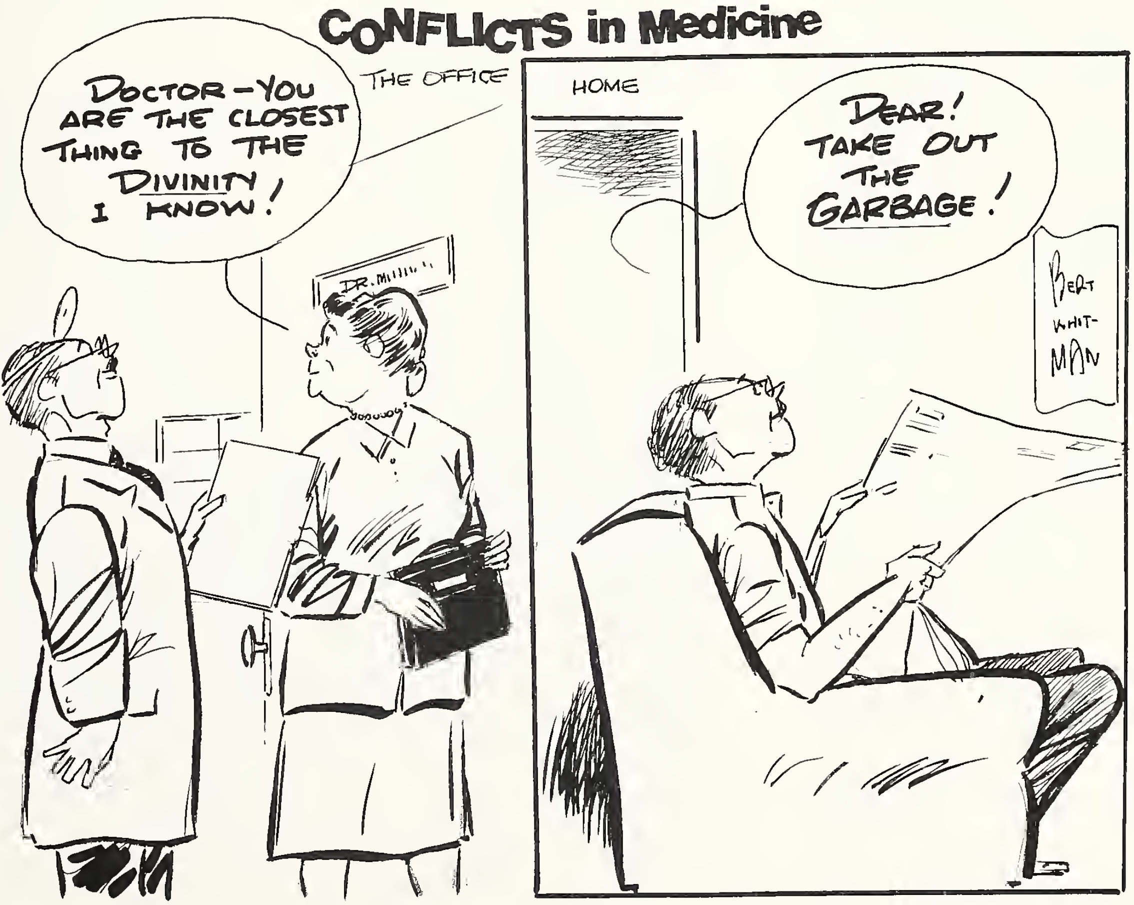
Editor—

I spoke to the Arizona Medical Association Ad Hoc Committee on Hospital Services on the evening of June 29 with respect to the positions and activities of the Arizona Coalition for Cost Effective Quality Health Care. At the meeting, I was given a copy of the editorial you wrote for a publication which is called *Arizona Medicine* (I believe). In any event, I must commend you for your stand. The only objection I would make is that I really don't feel that physicians should look at an alliance with industry as repugnant or as the last resort.

I would like to offer the following comments:

1. The Coalition does not consider doctors to be the problem. We are not asking you to raise your rates; however, doctors' rates have increased less than double digit over the last five years.
2. We feel there are a number of ways doctors can help, including better peer reviews, and education on the cost of various tests.
3. Doctors do not recognize the power they hold as a group with respect to the hospitals and, in many cases, have let the hospitals push them around.
4. Should there be a procedure for open staffing for all hospitals in an area?
5 The Coalition would be very happy to work out an alliance with the physicians. In any event, we certainly should be engaging in more discussions (unfortunately, both industry managers and physicians are very busy people). Anything you or others can do to promote those discussions would be appreciated
6. The Coalition recognizes full well that our present attempts to get some control on hospital costs are not the final solution by a long shot. There are many other aspects that will have to be addressed and, certainly, physicians should be a major part of those discussions. We feel, however, that it is imperative that we bring some immediate slowdown to the debacle that has been taking place. We would, of course, welcome you as allies in this first part, as well.

Joseph J. Campanella
President
Sperry


CONFLICTS in Medicine
THE OFFICE
DOCTOR - YOU ARE THE CLOSEST THING TO THE DIVINITY I KNOW!
DR. M
HOME
DEAR! TAKE OUT THE GARBAGE!
BERT WHITMAN

AM *Medical History*

The California-Arizona Maneuver Area World War II

Some Medical and Nonmedical Notes About this Desert Training Center—1942-1944

Part 3

John W. Kennedy, M.D.

Coccidioidomycosis Among Prisoners of War

There was a major camp for prisoners of war at Florence, Arizona. It was visited in September 1943 by Col. Verne R. Mason, M.C. Medical Consultant to the Surgeon General. He recognized that there were a number of probable coccidioidal infections and he alerted the Medical Officers and reported his findings. The Control Commission detailed a reply and outlined a program for the control. Florence, the Arizona Prisoner of War Headquarters from which a number of side camps for field work radiated, was a known endemic area. Already, the Commission on Epidemiological Survey had supplied coccidioidin, serologic facilities, and consultative advice to the Japanese Relocation Center on the Gila River, not far away from Sacaton, because of outbreaks of cases there. From that experience and from the information garnered from Williams Field, Arizona it was realized that the endemicity was high. There was no response apparently at Florence and it was not until December 1943 that the first serological specimens were sent for testing. The results of these tests, together with recognition of two deaths due to coccidioidomycosis and a return visit by Col. Mason initiated action. Because of the reputation of the area for its salubrious climate, Florence State Hospital was being used to hospitalize all tuberculous prisoners of war. There had been recent German complaints that prisoners of war had been placed in unhealthy areas and so the Surgeon General's Office dispatched Dr. Smith for his recommendations and inspection of the area. His studies substantiated the previous findings of the area at Florence and at Williams Field. "In that region, 50% of susceptibles were infected within six months time. Indeed, ten tuberculous prisoners of war were found to be infected while they were hospitalized on the wards. One patient who had a tuberculous effusion on admission to the hospital, developed a coccidioidal effusion on the other side. The superimposed coccidioidal infections did not appear to affect the tuberculous infections adversely." Dr. Smith after carefully evaluating these cases did not recommend that the tuberculous cases be transferred elsewhere but the Surgeon General's office in Washington decided that to avoid any criticism of violation of policy governing hospitalization of prisoners of war, that the patients should be moved elsewhere. Florence was maintained as headquarters for Italian and later German prisoners of war working out of the various side agricultural camps. (Figures 13,14.)

Another outbreak of cocci among prisoners of war occurred the following year, 1945, in the San Joaquin Valley.[1]

Very often one could trace the location of medical officers aware of coccidioidomycosis by the reporting of specimens from patients having recognized coccidoidal infections. This was evident in the assignments of Major Lewis T. Bullock, a pioneer worker on coccidioidomycosis at Luke Field Arizona, as he moved back and forth across the country.

Dr. Smith summarized this great epidemiological study which was conducted by the Armed Forces under his direction somewhat as follows. The leadership that was undertaken by the Surgeon General of the Army and his preventive medicine representatives in safeguarding the health of the United States troops was well portrayed in the experience of the Armed Forces with coccidioidomycosis in World War II. The Army Air Force demonstrated a kindred interest thus, there resulted a fine collaboration which developed a successful control program and performed extensive and rewarding research. The Army Ground Force was not as alert or responsive; its control programs and research were minimal, very largely dependent upon the unsupported enthusiasm and initiative of individual Medical Officers. Intrigued by this "new" infection, most Medical Officers contributed wholeheartedly to programs of control and research.

A Naval Experience

There is nothing quite like a case of acute coccidioidomycosis among the medical staff to get their attention. The senior medical officer at the Naval Air Station, Mohave, California developed the disease. After consultation with Dr Smith a survey was done.[8]

Two skin tests surveys of personnel were performed at 4.6 month intervals Thirty percent of the original negative became positive. Seven hospitalized patients with initial negative skin test became positive. (The clamidaspore w no respector of Military or Naval service assignments.)

The Incidence of Coccidoiodomycosis C-AMA

Dr. Smith prefaces his portion of his report, "It is not impossible to obtain accurate information as to the incidence of cocci in military personn in World War II."[7]

The reasons were multiple, this was new and exotic disease for most of th physicians who reported for duty in th area, the troops moved in and out of the endemic area rapidly, once the medical officers were indoctrinated they were frequently transferred and except for the Air Bases there was littl continuity in the skin testing and reporting of recognized cases.

The data Dr. Smith was able to assemble for the years 1942-1945 was 3,809 cases with 39 deaths. He continues, "The fact that 700 cases of coccidioidomycosis or 18% of the Arm total were hospitalized in only five Station Hospitals in the San Joaquin Valley area indicates that 3,809 cases was a gross underestimate of the disease."[7]

Dr. Russel V. Lee commenting on th incidence of coccidioidomycosis in th Western Flying Training Command states that "The unprecendented opportunity for study of coccidioidal infections which the mobilization and training of troops in the Southwestern United States provided, this was not neglected due to the foresight of Colonel Charles R. Glen and his successors."[9] Anticipating the situatio which actually arose, they enlisted the cooperation of Dr. Charles E. Smith, a a Surgeon General's consultant representing the Army Epidemilogical Board even before mobilization bega He continues, "there was a hazard recognized in putting troops in this area. The decision that the climate advantages for flying outweighed the hazard of coccidioidomycosis has bee amply justified. The accident rate in flying and training in this command h been the lowest in the country and favorable flying weather has been the most important factor in achieving thi record. Lives saved in this way far outnumber the lives lost from coccidiodomycosis." He goes on to describe how carefully the Flying Command launched this campaign. "/ new personnel coming on air fields ar tested when they arrive and the gative reactors are retested six nths later or when they leave the d, if before this time has elapsed. All picious clinical cases in the pensaries and hospitals are skin ed during the course of the disease l in addition specimens of blood are t to Dr. Smith for confirmatory dence when indicated. A campaign medical education has been ituted due to the fact that cidioidomycosis was just news to st of the medical officers." "As a ult of this program over a quarter lion skin tests have been given, a usand or more clinical cases ognized, nine complete autopsies ne, and an enormous amount of istical material has been collected." m what we can gather from Dr. th's official account, and there is e other data immediately available the ground forces incidence, the dical Department never inaugurated h a study among the ground troops he medical personnel.

fter World War II, when the reports he Western Flying Training mmand were evaluated by the ice of the Air Surgeon, Army Air ces and later as a co-equal branch of Surgeon General United States ny and when a separate USAF was ablished in 1947 and then a separate dical service by the USAF, when se training command reports were lly evaluated a special study of the Force Hospitals in the Southwest gan.

octor Louis Kossuth, then assigned he preventive medicine section of Surgeon General's office USAF, nitored the study.[14] That cocci was transmissable from patient to ient had been well established. But it possible that in some of these old ntonement World War II type hospitals, that the cocci spore still resided in the crooks and crevices and baseboards of these hospitals of the Southwest, where the Air Force had learned to its sorrow that coccidioidomycosis was not without a health hazard.[10]

So Major Harold V. Ellington was detailed to study and investigate these hospitals where cocci patients had been treated. It was decided to remove the baseboards, collect the dust and culture it for fungus. Major Ellington succeeded against all expectations, he acquired the disease himself, cavitated, lost a lung, but was finally rehabilitated and recovered and returned to active Flight Surgeon's status. Dr. Kossuth adds that this study did not destroy his friendship with Major Ellington, but he further adds that the investigation was never fully completed and, "He wonders about the rugs and baseboards of not only hospitals but all buildings where the flying clamidaspores may be wafted by our intermittent dust storms."[14]

As a result of the first tests conducted in the Western Training Command in 1941 at Minter Army Air Force Base near Bakerfield, it was found that one-fifth of all susceptable personel studied were infected during the summer and fall of 1941, in other words 20% incidence of the disease. Gardner Air Force Base at Taft, California had dust ankle deep and cases were occurring with almost the same rapidity there. These studies and others quickly led the Air Force to inaugurate dust control measures which have been mentioned elsewhere.

"A death from coccidioidal meningitis at one of these fields served to emphasize the importance of careful diagnosis and medical surveillance of the disease."[7]

An excellent review of the Air Force experience in World War II was published in 1954 by Williams and Ellington and should be studied in the original for the excellent clinical and historical review.[10]

High Incidence Among Negro Soldiers—Another Cocci Surprise

"In April 1943, twelve colored soldiers were admitted with acute pulmonary cocci. All came from the same organization, engaged in construction work near Banning, California. Four cases disseminated and one died—all colored."[11]

From this and other experiences the authors concluded:

1. Colored persons are more susceptible than white and require twice as many hospital days as whites to recover.
2. Despite the fact that California has long been known to harbor the fungus

Figure 13

Headquarters POW Camp, Florence, Arizona. Photo courtesy Florence Arizona Museum.

Figure 14

W's arrive at Florence, Arizona. WW. II. Photo courtesy Florence Arizona useum.

Figure 15
Chow Line, Field Problem, 3rd Armored Division near Iron Mountain, Californ

in the San Joaquin Valley and other limited areas, a new and large area is suggested. It is roughly triangular, bounded by Banning and Needles, California and pointing at Yuma, Arizona.

Recognition of Endemic Areas

Dr. Smith in the compilation of his prodigious efforts on behalf of the Armed Services has this to say about the status of cocciepidemiology prior to World War II. "Knowledge of the endemic areas is of great importance in recognizing clinical coccidioidal infection and implementing its control. Prior to World War II the endemic area in the United States was not clearly defined. It was believed to center in the San Joaquin Valley of California, while its northern limit was uncertain. On the basis of some cases reported from southern California, this area was also suspect. Just prior to the war cases were reported from Tucson, Farness (1939) and from Phoenix, Phillips, (1939) in Arizona. While the regions around El Paso and San Antonio, Texas had been established as other endemic areas by a few reported cases. Northern Mexico was suspect, while the Chaco region of Argentina was the only other known area."

The experiences of the Army Air Forces, Western Flying Training Command, the Army Ground Forces in the California-Arizona Maneuver Area and the prisoner of war camp at Florence, Arizona proved that southern and central Arizona were the most highly infected of all of the areas in the United States."[7]

Maddy, later, outlined the endemic area as corresponding to the Sonora Life Zone, others, "Where the creosote bush grows there dwells the cocci spores." Maddy listed other mammals as victims of the ubiquitous spore, "cattle, dog, horse, burro, sheep, swine, llama, monkey, gorilla, chinchilla, and various wild rodents." Great comfort, we are not alone!

Training Casualties

None of the critique reports on the various maneuvers, were available to us for review, none of these reports encompass any real information about the effectiveness of medical supply, medical evacuation or the general effectiveness of training and the function of the medical units per se. Every maneuver this observer participated in had medical umpires all over the place as well as other line officials, and with long correction reports coming down at the close of the exercise listing what you did wrong. In any event, there is one report about casualties and it reads as follows: "During maneuvers health was generally good. Sporadic cases of simple diarrhea occurred. In one month from August 17 to September 1942 there were seven deaths and 82 severe injuries resulting from the common causes.[1] Deaths and Causes: Accidential, crushed by boxcar rail head 1; skull fracture, motorcycle, 1; gunshot wound, 1; railroad versus tank; 2. Suicide: Gunshot wound, 1; Disease: septicemia, 1; Total deaths 7. Injuries: dislocations 11, burns 1, concussions 8, fractures 54, miscellaneous 2. Gunshots wounds, accidental 2, venomous snake bites 1. Venomous insect bites 2, internal injuries 1. Total injuries 82.

The casualty figures represented a little over one-tenth of one percent of the average strength engaged in maneuvers which varied from 50,000 to 64,000 inclusive.

It was rather surprising with these thousands of troops in the field, for the most part living in the open, sleeping on the ground and certainly maneuvering through snake infected areas, only one venomous snake bite was reported during this one month in the desert.

We have a few personal notes from physicians in the area and one of the most notable is of the late Doctor Ernest A. Born, a long-time physician and surgeon in Prescott, Arizona. Doctor Born entered the service on June 10, 1942 and was assigned to a medical unit at the Desert Training Center, 7th Surgical Unit later designated the 92nd Evacuation Hospital, semi-mobile, and was located at Frieda, California. His surgical team developed a special technique for the care of ruptured livers—not a rare problem in the widespread tank maneuver area. The damaged lacerated liver was packed and bound and the peritoneum closed, to be opened a few days later and the packing removed. Doctor Born reported that the survival rate was impressive.[12] Another personal note was from Doctor Samuel I. Rothman of Phoenix, Arizona in commenting on the death of his frien Doctor Albert Bodanski. "I first met A at Camp Young, California in July 194 a grand camp of Army squad tents in the vast forbidding desert between Blythe and Indio where mechanized divisions were being trained for the North African warfare. We were assigned to the 5th Field Hospital." Doctor Rothman further recalls that h saw some Army patients at the Community Hospital in Indio, Califor and among those were Mrs. George Patton, wife of the Commanding General.[13] Another observer noted th Mrs. Patton lived in Indio during the time that the General was in the dese but that the General did not reside in Indio. One of his first moves when he came to the desert was to get his staff out of the Indio hotel and into tents a Camp Young where he also remained Mrs. Patton was frequently seen in a Command car with no top, but with a umbrella, in the field observing the action going on. This may well have been at the area known as the Kings Throne and must have been adjacent Desert Center, this was a rise in the terrain and was said from here, Patton could gaze out on a large portion of the flat maneuver area and see if his beloved tanks were performing up to his expectations.

Water, Weather and Rations

There are several accounts of individuals who believed their units were "first in the area," some of these gentlemen were misguided because th maneuver area encompassed such a wide geographic site that indeed his unit might be the first to have arrived in one of the great camps which sprea across the desert for hundreds of mile

Charles E. Keller, at the time a technical sergeant with the 773rd Tank Destroyer Battalion writes, "The Dese Training Center, also known as Camp Young, was our base and we helped construct it within the giant training area. The first training in the new enter was known as "Little Libya" and vas commanded by General George S. atton, Jr. Our unit had come across he country driving their own vehicles om the midwest." Their truck convoy ad stopped for a rest period at Indio, alifornia and then resumed traveling oward Blythe and at about 25 or 29 nilepost out of Indio, the convoy was opped for what most of the members hought would be a routine rest stop. But this turned into a work stop at the eginning of Camp Young, Desert raining Center. Machete knives were sued and areas staked off which were become company streets and attalion headquarters areas. The first etail was cutting sagebush and cactus the areas, then it had to be gathered nd piled up out of the area so it could e disposed of later. Next was the itching of pup tents in company rows, upplies, motor vehicles and mess ucks were placed in cleared areas and ithin a week the camp started taking hape as the engineers moved in with ulldozers and other equipment. The attalion cleared more areas and yramidal tents were set up in place of up tents, also a mess hall was built onsisting of an enclosed kitchen with ng overhanging open air dining area ith just a roof overhead. There were bles and benches. These were not uch good when sandstorms came and ou didn't know if you were eating rits' or sand. The intense heat of the ay made the work on vehicles, layout, spection of tools and equipment most impossible at times. Tools once id out could not be touched or cked up again during the day." He lds, "During the summer months 130 egrees in the shade was common and ere was very little shade. Even so ankets were sometimes needed at ght. More than 10,000 troops made the first task force operating out of e new center."[15]

Patton didn't waste any time. It was ere that Colonel Ray C. Hildreth also a ember of the same unit recalled, General Patton's wife in a command r with an umbrella, following the aneuvers in over 100 degree heat. We ad only one canteen of water for 24 ours during maneuvers.[17] It was about is time that a submarine threat on the alifornia coast put everyone on alert. ne observer referring to this, noted at "General Patton didn't know that e had no ammunition for most of the uns that were on alert." Supply was eager and chaotic at times. But Villiamson, this observer, a member of atton's staff, felt that General Patton ould have run the tanks and other ehicles up and down the shore where e Japs were coming ashore and make uch a racket and show, that they ould scamper back to their boats."[16] No one came ashore and the alert subsided.

These camp sites on the California side, were near the Colorado River or along the massive irrigation canals going to the Imperial Valley, these units could set up water points and have ready access to all the water they needed. There were some misguided generals who thought they could ration water and harden troops so that their water requirement became less as they stayed in the desert and this, as we shall see led to some tragedies.

An observer of some of this was Captain Thomas A. Clark who served as the DTC Headquarters through three successive maneuvers, beginning in July 1943. He relates, "I visited engineer units which were stationed at Imperial Dam on the Colorado River just north of Yuma. These were specialized engineer units and needed water for their functions. There was a pontoon bridge company and a water supply battalion. There may have been two of these because I remember one unit was commanded by Lt. Col. Pyle and his product was known as "Pyle's Bile" and the other water supply unit was commanded by an officer named Swatta and naturally his product was called "Swatta's Watta." These jokes were bad enough that I have remembered them for thirty odd years."[18] But many camps were not so fortunate, for instances at Camp Bouse, Camp Hyder and Camp Horn, Arizona, advance parties came in and drilled wells. At each of these wells a reservoir was constructed as a holding tank. Even so, water was scarce and a shower was a luxury. A few miles over the mountain from Camp Hyder is Aqua Caliente famous for its hot springs beginning in Indian and Spanish days but now it languishes with only some ranches in the area. During World War II the Army constructed a cement swimming pool which was fed by the hot springs. The cement pool still squats there in the sun intact, but completely empty. Early in the training cycle the order came down that there would be no ice in the company or division areas and of course this meant that green vegetables and fresh meat were out. During August through September of 1944 five different kinds of rations were used, "A", "B", "C" and "K" and a combination known as five in one. The latter consisted of a "B" ration made up into a lot from which five men were rationed and was issued to a vehicle crew. The quality of "A" and "B" rations was found satisfactory, but "B" ration lacked variety being evidently based on a three day cycle which resulted in constant repetition. The "C" ration was used in a number of instances but was furnished only in one menu. "K" ration was tried for a short period and it was found to be extremely satisfactory for longer periods, however, the amount of cheese was deemed excessive.[1] (Figure 15).

Figure 16
Medical Detachment 315 Engr. 90th Division Desert 1943. Photo courtsey M. McKee.

As you can imagine there was a shortage of transportation, with all kinds of supplies coming into the new area. The railroad facilities at Indio were woefully inadequate. "In early 1943 the daily ration train was put into operation from Colton to the Desert Center, it added to the problem of routing. Army Hospital Trains had the right-of- way and that held up traffic since there was but a single track between Colton and Yuma, the main line. Early on when General McNair sketched his training policies for the Center and they were implemented by General Patton, "The hope for ice in the field demolished." The main thrust of training was to be realism. They wanted all construction and equipment restricted to what would reasonably be expected in an active theater of war. At a conference it was decided, unless the Ground Surgeon could show cause for their retention, perishables would be dropped from the menu and ice boxes and screened kitchens would be eliminated. (Oh! the flies, the flies, the flies). The Ground Surgeon did not object to the use of "B" ration considering the vitamin content was adequate and the ration was fully utilized. He warned of the need to plan menus carefully in order to forestall monotomy; spam or sardines could not embrace every meal. The fly menace was variable and measurable in the Center. Studies by the medical laboratory had afforded proof that flies were responsible for a near epidemic of dysentery. If the kitchens in the base camp were to be patronized only a few days out of the entire time the unit spent in the Center, screening was not necessary. Many units, particularly service units had to remain in certain areas for long periods and for them screening was advised because of the greater potential of fly borne disease.[1]

And so it was at 2400 hours on August 14, 1943, delivery of ice was stopped and the Center went on "B" rations. Units were not permitted to become permanently attached to the base camp and this was considered commendable. But when the cat is away the mice will play. When General McNair visited C-AMA in December 1943 some six months later, he observed that the Post Exchange and the Officers Club at Camp Young were serving fresh milk and sandwiches. He ordered that stuff to be taken out without delay and to ensure that all troops in C-AMA subsisted on field ration "B" with the exception being only for patients in the Station and General Hospitals, later broadened to include the patients in the Evacuation Hospital. This was soon modified so that in no case would any personnel be kept on "B" rations for periods in excess of two months without a break of several days in which "A" ration was fed. There were many complaints about the monotony of the food. (when the troops stop bitchin' watch out).

Of course the Army got a lot of criticism and advice from observant civilians. A Mr. James H. Gordon in charge of the weather bureau at Yuma, Arizona asserted, "That training has passed beyond a constructive into a destructive stage." And he further reported that heat prostrations were staggering. This probably was a newspaper report. At any rate a peppery surgeon, Doctor E. Payne Palmer, Sr., head of the Southwest Clinic in Phoenix, Arizona, wrote Senator Carl Hayden asking for an investigation. Well of course the Senator wrote the Surgeon General and stated in his letter that Palmer "was characterized as one of the most noted physicians and surgeons in the Western and Southwestern United Sates and that he had called attention to an incident where three men had died and he hoped for an investigation of the training methods."

In that incident the errors in judgment by those in command were not of a nature to have brought a conviction even if the officers had been tried for negligence. The carrying out of a field problem caused a change in the route of an infantry platoon. No time being available for a detailed reconnaissance, the platoon was assigned a route not previously used. When the vehicles became stuck on a ledge the platoon continued its march, inasmuch as the umpire had on a previous occasion instructed the platoon commander to continue the march and not concern himself with the vehicles, which carried water and rations, as these supplies were certain to be at the final distination. The platoon arrived at a spot which they mistook for their destination and found no water or rations. The platoon commander returned on foot to secure water and rations for his men, but water was not available at the water point which compelled him to make a longer trip to secure it. The men were without food for about 24 hours and had about a half canteen of water per man for about 12 hours and during this time were exposed to extremely hot weather. Private James H. Nash died. Sgt. Robert Powarn and Corp. Julius Ortega both of whom were in better physical condition than the other members of the platoon went for aid against the advice of Sgt. Joseph P. Morrison, acting Platoon Cammander in the absence of a Commissioned Officer. The two lost their bearings and their bodies were later found by a search party. If they had remained with their platoon their deaths would probably not have occurred. When remedial aid and vehicles were requested for the platoon, these were immediately dispatched.[1]

The late Senator Hayden's papers now repose at the Hayden Library at Arizona State University. We have searched through these but we are unable to find Dr. Palmer's letter or an of the other correspondence relating t this incident.

Table 1

Type of Unit	Requested	Furnished	Not Furnished
Medical			
Gen. Hosp. (100 bed)	3	3	
Sta. Hosp. (250 bed)	5	5	
Sta. Hosp. (150 bed)	1	1	
Vet. Det Sep.	5	3	2
Dental Clinic			
Cent. Dental Lab	1	0	1
Med. Lab (Army)	2	1	1
Co. Co. Depot	2	0	2
Hospital Training Hospital	1	1	
Convalescence	1	0	1
Hospital Field	1	0	1

There were some commanders who tried to limit their troops to one canteen of water a day and they seem to have learned very slowly that water simply could not be strictly rationed and that troops could not be trained to exist on a constantly diminishing water supply. The official history does not mention fatalities to this sort of deprivation, but there are rumors which persist to this day of such unfortunate events.

So water, weather and rations presented considerable problems to th maneuvering troops and it was anythin but a tea party. But there were breaks, men were allowed on weekend pass to go to the California side to Los Angeles On the Arizona side they usually descended upon Yuma and Phoenix both relatively small towns, which could not accomodate the mass influx of troops.

The Army set up a rest area at the ol fairgrounds in Phoenix with tents, mess halls, soft drinks and beer so that when the facilities downtown were filled there was still plenty of space for troopers to relax. Many of the troopers looked forward to spending a weekend or a week at this rest area. There are several references to this from our various correspondents and they looked upon this as a welcome relief from the tedium of desert training.

We do not have access to a detailed list of hospitals and other medical units that supported the maneuver area or moved in and out at intervals. There is a list in the official history of the type of medical installations which were requested for the maneuver area and the accompanying tabulation shows that general and station hospitals together with medical laboratories, dental clinics and a medical depot were requested, some were furnished, others were not. (Table 1)

As stated, we do not have an official listing of all the medical units involved, but the following hospital units have been gleaned from the scattered data available and from personal recollections of some of our correspondents: The 150th Station Hospital, Camp Bouse, Arizona; 41st Station Hospital, probably near Needles, California; 54th Evacuation Hospital; 21st Evacuation Hospital; 98th Evacuation Hospital; 58th Evacuation Hospital; 54th Station Hospital; 92nd Evacuation Hospital; 36th Evacuation Hospital; 13th Field Hospital; 127th Station Hospital; and the 13th General Hospital.

The Company, Battalion, Regimental, Division, Corps and many other medical detachments came and

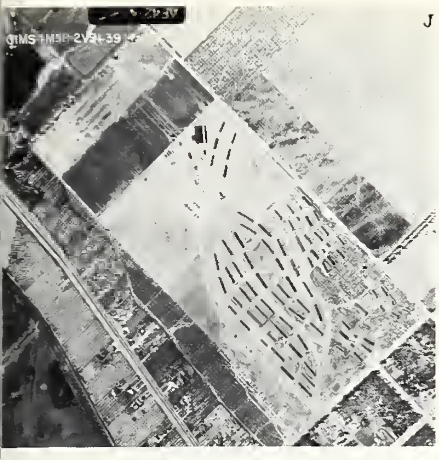


Figure 17
anning General Hospital. Photo ourtsey National Archives.

eparted with combat units they ipported.

Temporary contonement type ospitals on the periphery of the area, n the California side must have been umerous. At Yuma, Arizona and eedles, California station hospitals ere given semipermanent quarters.

Cherry Valley General Hospital, near eaumont; Banning General Hospital nd Spodra General Hospital were mong the supporting 1000 bed general ospitals in the area, housed in emipermanent contonement iildings.[19] (Figures 17 and 18.)

onclusion

Besides the problems of desert dust, ipply, terrain and weather, at least two ajor medical problems plagued the aneuver area.

"Yellow jaundice," wholly iexpected following inoculation of oops with yellow fever vaccine, this elayed the initial mass maneuvers in e summer of 1942. The casualties ugged the entire medical evacuation stem, and the slow recovery of atients and the need for physical training delayed their return to duty.

A more insidious cause of casualties as the widespread areas of high occidioides immitis infestation. It was iown that the San Joaquin Valley was ı endemic area, but an unknown reat or ignored threat existed in many her areas. The medical support of the ir Training Command took early tion to control the disease at Air aining Stations. The Ground Forces ere less enthusiastic and effective.

The training standards were high, the imate and terrain tested the physical amina of troops and the mechanical erformance of all vehicles and eapons.

The austere training standards augurated by General Patton, with ome lapses, were adhered to long after is departure. Patton knew that there is o "second chance" in combat and is said to have followed the old Roman axiom, "The legionnaires should fear their officers more than the enemy."[16]

Now the desert has for the most part, reclaimed the area, a few rock monuments remain, and perhaps some ghosts of the long departed gallant men who trained there. (Figures 19 and 20.)

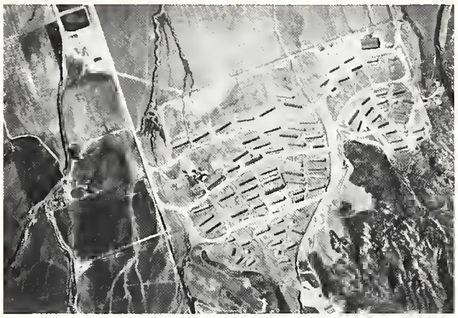


Figure 18
Cherry Valley General Hospital. Photo courtsey National Archives.

Figure 19
77th Infantry Division Troops in the Arizona Desert. Photo courtsey Infantry Journal Press, 1947.

Figure 20
A rock monument around the cactus in beautiful downtown Butler Valley, Camp Bouse, Arizona as it appeared May 21, 1981.

Acknowledgement

To John S. Lynch and Robert S. Wooley, stalwart pushers and pullers of the Council on American Military past, I owe my interest in this World War II maneuver area. Their study of *Patton's Desert Training Center* in Camp Periodical, Volume XII, No. 2, December 1982 should be consulted for a detailed historical description of the area and exact locations of the major division camps.

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16. Williamson PB: *Patton's Principles* MSC Inc., Tucson, Arizona 1979.
17. Hildreth R, Col.: Personal Communication, 1980.
18. Clark TA: Personal Communication, 1980.
19. Military Historical Section, National Archives.

Obituary

John D. Waggener, M.D.

1927—1983

The unexpected death of John D. Waggener, M.D., following coronary bypass surgery on June 10, 1983, was a shocking tragedy to his wife, Marjorie, to his four sons, John, Andrew, Joel and Miles, to his three brothers and sister, and to his many friends in the medical profession and in other walks of life. John would have been 56 years of age in a few more days. He had achieved national and international recognition for his clinical and research activities in the field of Neuropathology, including his pioneering work in electron microscopic studies of the nervous system. A strong family man, he loved sailing as an avocation, spending frequent weekends pursuing this hobby with his family and friends.

Dr. Waggener was born in Denver, Colorado on June 21, 1927. He attended Mississippi College in Clinton, Mississippi during 1944 and 1945, served in the U.S. Navy as Pharmacist Mate at Bethesda Naval Medical Center, Bethesda, Maryland during 1946 to 1948, and completed studies for his BS degree from Mississippi College in 1950. John then proceeded to Vanderbilt University Medical School in Nashville, Tennessee, receiving his M.D. degree in 1954. He served one year as rotating intern at Jefferson Davis Hospital, Houston, Texas from 1954 to 1955. On August 30, 1955, he was married to Marjorie Marie Reuter of Houston, Texas. John did General Practice for the next four years in Mississippi. He enjoyed this period of his life greatly and also the home and family that Marjorie made possible for him. During my visit with him a few hours prior to his heart surgery, he recalled, during this period of his life, that he had seen a patient in whom the first warning of coronary disease was most unusual, the same as his own—palatal angina. He also related the fact that his father and three relatives had heart attacks in their forties and that the two who survived had had meaningful recoveries and both had coronary bypass operations. He was optimistic, but realistic about his future.

During the period from 1959 to 1963, Dr. Waggener served as Resident in the Department of Pathology at the University of Texas Medical Branch in Galveston, Texas. Kenneth M. Earle, M.D., excited him about Neuropathology and during this time John studied as NIH Special Fellow in Neuropathology, University of Texas Medical Branch, Galveston, Texas, 1961-1962. He continued as Instructor, then as Assistant Professor of Pathology and Neuropathology, University of Texas Medical Branch, Galveston, Texas until 1964. He was invited by Pathology Associates of St. Joseph's Hospital and Medical Center (Laurel Stapley, M.D., Onie Williams, M.D., George Kent, M.D., Frank Mann, M.D. and Heinz Hoenecke, M.D.) to come to Phoenix in 1964 to become a member of their group and to become Chairman of the Division of Neuropathology of the Barrow Neurological Institute of St. Joseph' Hospital and Medical Center. Dr. Waggener succeeded the late James O. Kernohan, M.D., distinguished neuropathologist, who had retired from the Mayo Clinic to organize the Division of Neuropathology when the Barrow Neurological Institute was opened in 1962.

Dr. Waggener's career with the Barrow Neurological Institute from 1964 to June of 1983 was exceedingly productive from all standpoints. First of all he was exceedingly competent as an anatomic pathologist and neuropathologist for both the Department of Pathology of St. Joseph's Hospital and Medical Center and for the Barrow Neurological Institute. He was a superb teacher of residents in Neurology, Neurosurgery and Pathology. His research in the fields ultrastructure of the glial-Schwann cell relations, the blood-brain barrier, tumors, stroke, injuries of the brain and spinal cord, cerebral edema, and infections pioneered his field. His initial collaborator was Helen Ramsey, Ph.D. and, in recent years, was John Beggs, Ph.D. He has many publications of high quality. The Women's Board of the Barrow Neurological Foundation provided a research laboratory, equipment and a replacement for the original electron microscope for him. The neurosurgical residents gave him their "Teacher of the Year" award on several occasions. Dr. Waggener was certified by the American Board of Pathology in both Anatomia Pathology and Neuropathology in 1964. He was a member of the Maricopa County Medical Society, the Arizona Medical Association, the American Medical Association, American Association of Neuropathologists; Alpha Kappa Kappa and Sigma Xi.

John Waggener will live on in the minds of his family, students, colleagues and many friends. His family have requested that a John D. Waggener Memorial Fund be established to carry on his work in Neuropathology Research. The Barrow Neurological Foundation has accepted the responsibility to organize the John D. Waggener Neuropathology Research Endowment Fund. It is planned to pursue this goal during 1983 and 1984. Depending upon the size of the fund, it will then be designated to create the John D. Waggener Neuropathology Research Fellowship, the John D. Waggener Neuropathology Research Laboratory, or the John D. Waggener Division of Neuropathology. The address of the Barrow Neurological Foundation is 350 West Thomas Road, Phoenix, Arizona, 85013.

John R. Green, M.D., Director
Barrow Neurological Institute
St. Joseph's Hospital
and Medical Center
Phoenix, Arizona

ArMA Reports

The minutes appearing in this section have been condensed. A complete copy of them will be sent to any member requesting them.

EXECUTIVE COMMITTEE

A special meeting of the Executive Committee was held on July 7, 1983.

This meeting was called because of he Maricopa County Medical Society's recent action in favor of deunification, which is in conflict with the current bylaws of the Association.

Mr. Jacobson and Mr. Nielsen, representing legal counsel for the Association as well as the county society, spoke about the legal/ethical questions which came out of the Society's action. They advised they could only participate in discussions or attempts to work out solutions if both parties requested it, which at the point was the case, and counsel was willing to proceed.

Dr. Stephens, President of the Maricopa County Medical Society, addressed the members stating what he believed to be some of the basic facts which brought about the poll of county membership and resulted in a vote in favor of deunification (elimination of membership in ArMA as a requirement of county membership). He gave the following as some of the reasons for their actions: decline in membership, an overall look at the society's financial picture, and ArMA's decision in 1982 to deunify from the AMA.

The committee discussed at great length the impact this decision would have on the Association and other county medical societies. It was determined that ArMA has two options 1) withdrawal of the charter of the Maricopa County Medical Society for failure to comply with the Association's bylaws; or 2) acceptance of the action by a county society which comprises a majority of the Association membership and presentation to the House of Delegates of amendments to the existing bylaws which would respond to such action in addition to allowing the Association the right to also directly solict members.

Due to the urgency of the situation, it was agreed that legal counsel would immediately begin drafting amendments to the bylaws for review by the Executive Committee and the Board of Directors and, if approved, for submission to the House of Delegates for action at a special fall meeting. It was also agreed that staff would prepare for the Board a list of possible budget cuts which could be accomplished should the county's action result in a drastic decline in ArMA membership. Additionally, it was deemed most important that the membership be immediately apprised of the county's activities and informed of the Executive Committee's concerns and efforts to confront the issues.

It was moved and carried that an article be prepared for publication in *Medical Memos* and the county publications setting forth the recent action taken by an affirmative vote of the membership of the Maricopa County Medical Society to deunify (allowing for direct membership in *either* the county society or the state association), advising of ArMA's concern, and informing the membership that the Association is in process of developing recommendations for House of Delegates' action at a special meeting in early fall, which can, hopefully, amicably solve the situation which has arisen.

PUBLIC RELATIONS COMMITTEE

The Public Relations Committee met on July 9, 1983.

Report on visit by Drs. Rubach and Geyser and Director of Communications to Publisher and Editor of Mesa Tribune. Series of media dinners to begin in October-November with briefing session recommended for participating physicians prior to the meeting.

Long range goals discussed along with listing of present activities of Communications Director (see enclosed). Dr. Kravetz recommended that these goals be prioritized at next meeting and stressed the importance of setting a definite timetable for implementing goals.

The Committee recommended that the Legislative Committee consider developing a program of inviting legislators to spend a half or full day with physicians, learning about the patient-physician relationship at first hand. This would be a pilot program and would be expanded at a later date to include businessmen and other community leaders.

MEDI-FACTS, a quarterly newsletter, discussed as a way to achieve better communication with the public about socioeconomic and health topics. The Committee decided that ArMA should prepare four issues of MEDI-FACTS within the next twelve months to be mailed to physicians for use in their waiting rooms. Additional issues are to be made available to physicians on a cost-even basis.

Concern was expressed that such a newsletter might be overlooked in the flood of material that crosses physicians' desks and it was recommended that phrase "waiting room" copy be displayed prominently on both newsletter and envelope.

A total of 83 entries received in 1983 Media Awards competition (46 from daily papers, 19 weekly, 15 television and 3 radio). Four first place awards and nine Citations of Merit presented at President's dinner during Annual Meeting.

Decision was made to expand the 1984 competition to five places, adding a category for highschool newspapers. Prizes are to be reduced from $250 to $100 for first place. Director of Communications to determine time schedule for competition and prepare a flyer which is to be sent to media.

Provide Accurate Health Information to the Public

*Brochures

Health Tip columns for employee publications of business/industry

Health Tip columns for weekly newspapers, personalized by using quotes from ArMA members

Public Service Announcements for radio and TV stations

*Publish patient newsletter for distribution by physicians

*TV and Cable TV programs

*Participate in health fairs, health seminars, health talks

*Sports Medicine Quarterly newsletter and annual seminar

Publicize and Explain in Lay Terms Positions ArMA and/or the Medical Profession take on Health Care and Socio-Economic Medical Issues

*Work with ArMA committees in anticipating issues and preparing explanatory statements

*Train ArMA and county leaders in speaking techniques, handling interviews

Use brochures, newsletter, paid advertising if necessary

Improve Communications Between Physicians and the Media

*Meet informally with editors and publishers as well as reporters

Assist County Societies in setting up respondents' panels

*Continue awards for medical reporting

*Continue rapid response to press queries

Emphasize Concern Physicians feel for their Patients and their Communities

*Publicize physician involvement in health care projects

Work with ArMA committees in developing new projects to meet community needs

Enlist support of Auxilians in carrying out projects

Develop Ways to Explain Differences Between Training Physicians Receive and that of Limited License or Unlicensed Practitioners

Stress the positive, since we can't make unfavorable comparisons

News stories and newsletter articles about a day in the life of a physician, how medical students are selected, etc.

Take community leaders along for a day with a physician

Provide More Services to ArMA Members

*Publications such as FYI, Legislative Beat, Medical Memos, Arizona Medicine

Publicize ArMA services to members

Tell nonmembers about advantages of ArMA membership and services

Help Members Use "Marketing" to Establish and Maintain Practices

In-House Services

*Printing Department, brochures for child safety seat campaign, etc.

*Denotes activities being carried out by ArMA.

EXECUTIVE COMMITTEE

The Executive Committee met on July 22, 1983.

The committee received a copy of the bylaws amendments regarding deunification at the county level which were prepared by legal counsel and staff; and it was agreed since the document required in-depth reading, each member would review their copies and respond within ten days with comments or suggested changes. It was determined that only comments containing "substantive changes" or evidence of a "new philosophy" would be circulated to the committee membership. Also copies would be sent to Charles E. Henderson, M.D. and Edward Sattenspiel, M.D. for their review.

The committee discussed the Board of Medical Examiners invitation of March 31, 1983 (reviewed by ArMA's Board of Directors and referred to this committee for study) for Board members and staff to attend their regualar meetings. It was agreed because of the length of these meetings, no one person would be assigned to attend, but that participation would be on a voluntary or as needed basis by any who found allowances in their schedules or an item of business warranted attendance.

It was moved and carried to receive for information correspondence relative to health care in Arizona prisons from Richard O. Flynn, M.D. dated June 24, 1983 and from the Board of Medical Examiners to Governor Bruce Babbitt dated June 20, 1983, and request BOMEX to keep ArMA informed of any follow-up regarding this matter.

It was moved and carried to respond to the letters received from John H. Jarvis, M.D. and the Chandler Medical Surgical Group (as well as to other written or oral inquiries which have been or may be received) regarding the Arizona Department of Revenue's recent correspondence on the State Use Tax by forwarding a copy of the Office Memorandum of Snell & Wilmer dated July 21, 1983 dealing with the subject of "Physicians and the Use Tax," which responds to questions and concerns which have been raised by the medical community.

It was agreed that another article be included in *Medical Memos* encouraging response by physicians to the Department of Revenue, education (either through their attorney or accountant) regarding the use tax, and compliance with the statutes.

The committee received and discussed the comments of the Governmental Services Committee to the "Proposed Health Planning Program and Structure for Arizona" prepared by the Ad Hoc Local Health Planning Committee of the Statewide Health Coordinating Council; considered the request of the Governmental Services Committee that those comments be presented to SHCC during meeting in mid-August as the "Position" for the Arizona Medical Association.

It was moved and carred to accept the suggested comments (attached hereto marked Exhibit "A" and by this reference incorporated herein) of the Governmental Services Committee to the Statewide Health Coordinating Council's "Proposed Health Planning Program and Structure for Arizona" as the Arizona Medical Association's position regarding same. (A copy of the report can be obtained from the ArMA office.)

It was moved and carried that Neopito L. Robles, M.D., as President of the Association, extend to Mr. Don Mathis, Director of the Arizona Department of Health Services, an invitation to attend, as a guest of the Association, all meetings of the Executive Committee.

It was moved and carried that a Membership Committee, which would address the problems which could arise by virtue of the recent action of the Maricopa County Medical Society and the resultant activities, be immediately formed, to be comprised of seven directors to be appointed by the President.

It was moved and carried that the Arizona Medical Association have prepared for presentation to Luther Terry a plaque in recognition and appreciation for his efforts and work in the area of nonsmoking.

The subject of DRGs (Diagnostic Related Groups) and a possible program to bring about awareness of the issues and the impact which will be made on the physician was brought up by Dr. Collins, and the committee was informed that, as part of a seminar and organizational meeting for the newly-formed Hospital Medical Staff Section, such a program is in the planning stages for the morning of September 24, 1983.

The meeting adjourned to Executive Session after which it was moved and carried to make a variety of recommendations to the Board of Directors in the area of reduction of expenses.

MEDICAL ECONOMICS COMMITTEE

The Medical Economics Committee met on July 26, 1983.

The Committee discussed the outcome of the Industrial Commission hearing on Physician's fees. It was noted that the current figures allowed are roughly what was requested by ArMA in 1979. Suggestions were made that representatives from various specialties appear in person before the Commission next year. Members were asked to bring back suggestions to the next Medical Economics meeting.

Richard D. Zonis, M.D. summarized Report D. of the AMA Council on Medical Service. He reported that a representative of the Council gave excellent arguments and recommendations on indemnity v. UCR at the AMA Annual Meeting in June. The AMA Reference Committee asked that local associations discuss this issue and report back so a debate could be held on the floor of the House of Delegates in Los Angeles in December.

It was moved and carried that this committee support the pluralist approach to reimbursement for physician services and oppose any mechanism that would substitute a universal method of physician reimbursement, i.e., indemnity. The committee therefore does not support adoption of the AMA's CMS Report D (A-83).

A discussion ensued over the fact that insurance premiums and coverage continually change and the Medical Economics Committee should review various plans available and make recommendations to the Association. Mention was made of utilizing students at the University for an independent appraisal.

It was moved and carried that this committee recommend to the Board of Directors that funds be provided to hire an independent consultant to review existing society insurance programs and compare them to the other programs which may be available in the marketplace and report back to medical economics committee for further evaluation.

AD HOC COMMITTEE ON HOSPITAL SERVICES

The Ad Hoc Committee on Hospital Services met on July 27, 1983.

Dr Ward briefly addressed the committee members and guests regarding the activites of this committee and its efforts toward the recent establishment within ArMA organizational structure of a Hospital Medical Staff Section and then requested the guests to comment, for information purposes, on their June attendance as representatives to AMA's inaugural meeting of its Hospital Medical Staff Section.

All of the guests were in agreement that the meeting was very well run, exceptionally attended (over 600 physicians representing approximately 10% of the hospitals in the United States), and that all were very responsive to the benefits this type of forum would provide. The concerns which initially prompted the formation of the section of the AMA level were discussed as well as some of the topics included for discussion at the June meeting in Chicago, i.e., the JCAH standards, DRGs, PPOs, board/staff relationships, cost shifting, peer review, legal counsel, etc. The establishment of a like section at the state level was felt to be most appropriate and timely.

It was agreed that, due to the previous involvement and knowledge of the Ad Hoc Committee on Hospital Services, the members of that committee would act as the "Steering Committee" for the organizational meeting of the Hospital Medical Staff Section.

In planning for the drafting of a set of bylaws to be presented to the Hospital Medical Staff Section for review during its organizational meeting scheduled for September 24, 1983, the committee reviewed and discussed at great length those documents adopted by the Medical Association of Gerogia for its Hospital Medical Staff Section and those developed by the AMA.

It was agreed that the general format of the Georgia bylaws (attached hereto) would be followed in preparing a similar set for ArMA's HMSS, with the following exceptions:

1. That members would be required only to be "voting" (instead of active) members of an Arizona hospital medical staff and that no other restricitons would apply.
2. That there would be no designation of districts.
3. That there will be no limitation of membership by reason of bed-size of hospitals—each Arizona hospital would be entitled to *one* representative who is a member of ArMA.
4. That no provision yet exists at the AMA level for representation by ArMA's HMSS and, therefore, no inclusion for such participation can be made.
5. That the Governing Council of HMSS shall consist of seven members, consisting of a chairman, vice-chairman, secretary, and the two delegates and alternate delegates to ArMA's House of Delegates.
6. That a quorum shall be "a majority of those present and voting." (The bylaws draft can be obtained from the ArMA office.)

The format of the organizational meeting of the Hospital Medical Staff was discussed, it was agreed that a morning program would be developed around such subjects and DRGs, proposed professional liability tort reforms, board/medical staff relationships, subject to speaker availability.

Following a noon luncheon, the afternoon would be devoted to formal development of HMSS, with review and adoption of bylaws, election of officers, discussion and consideration of resolutions which might be appropriately developed by medical staff representatives, establishing a mechanism for encouraging participation and involvement in the section, and setting a meeting time frame to coincide with national and state meetings.

It was additionally agreed that notification of this organizational meeting and the invitation to send a representative (elected or appointed) of the medical staff who is also a member of ArMA be immediately directed to the Chief of Staff of every hospital in Arizona, including both osteopathic and governmental.

EXECUTIVE COMMITTEE

The Executive Committee met on August 19, 1983.

It was moved and carried that the minutes of the meeting held July 22, 1983 be approved as distributed, with the following exception: that the action taken regarding the formation of a Membership Committee be amended to read in its entirety as follows:

"It was moved and carried that a Membership Committee, which would address the problems which could arise by virtue of the recent action of the Maricopa County Medical Society and the resultant activities, be immediately formed, to be comprised of a number of persons to be selected by the President."

Mr. Kevin Walker reported on his recent attendance at an AMA Membership Development meeting in San Francisco, stating that the purpose of such meetings seems two-fold, i.e., 1) opportunity for the AMA to inform state associations of its services and 2) information sharing. Mr. Walker commented briefly on some of the content of the meeting, including a report on a new dues credit program being conducted in Hawaii, the valuable services of the AMA survey staff, attempts to break down barriers between counties and states regarding membership solicitation and a definite national trend to not require licensure within a state prior to membership.

Following Mr. Walker's report, and in discussing the current requirement in ArMA's bylaws that physicians must be licensed to practice medicine within the state prior to being granted "active" membership status, the committee took the following action.

It was moved and carried to request that Ad Hoc Membership Committe and the Articles of Incorporation Committee to review the bylaws of the Association and consider a change which would allow for unlicensed, as well as licensed, physicians, who otherwise satisfy all requirements to be granted active membership in the Association.

It was moved and carried that the requests for dues exemption and dues refund received from Robert L. Daywitt, M.D. and Warren H. Heller, M.D., respectively, be referred to the Maricopa County Medical Society for its review, consideration and determination.

The committee was advised that the following had agreed to serve on the newly-formed Ad Hoc Membership Committee: Neil O. War, M.D., as Chairman, Earl J. Baker, M.D., John C. Bull, M.D., John K. Kerr, M.D., Philip Levy, M.D., and Richard D. Zonis, M.D. Additionally, Dr. Robles requested the committee's approval for his appointing two additional members, Drs. John T. Clymer and Gary L. Henderson. The committee concurred with this selection.

It was agreed that, if the Board of Directors in meeting on 8/20/83 determined to call a Special House of Delegates' meeting to consider bylaws changes allowing for direct membership, that an explanatory letter, jointly signed by Dr. Robles and Dr. Stephens, be directed to the members of the House by way of education regarding the basic content of the resolution.

BOARD OF DIRECTORS

The Board of Directors met on August 20, 1983.

Dr. Neubauer, Chairman of ArMPAC, reported on the recent June meeting of the board. Dr. Neubauer advised that there had been a change in membership fees and a redesign of the ArMPAC brochure. In commenting briefly on upcoming state and national meetings, a request was made for funding of Dr. Neubauer's attendance at the ArMPAC meeting to be held in Washington, D.C., following which it was moved and carried that the Arizona Medical Association provide funding, up to $1,500.00 to William N. Neubauer, M.D. for his attendance at the upcoming meeting of the American Medical Political Action Committee to be held in Washington, D.C.

It was moved and carried to confirm the appointments of A. Lee Ansel, M.D., William J. Casey, Jr., M.D., Jay A. Katz, M.D., Christopher T. Maloney, M.D., John G. McGregor, Jr., M.D., and Theodore L. Mobley, M.D., as members of the ArMPAC Board of Directors for the term 1983-84.

It was moved and carried to confirm the appointment of Charles E. Henderson, M.D. as Parliamentarian for the Association.

Neil O. Ward, M.D., in the absence of the President of the Maricopa County Medical Society, provided to the members a brief synopsis of the background and activities leading up to the recent action taken by the membership of the Maricopa County Medical Society which now allows for direct membership in that organization. Following discussion of the options now available to the Association in light of the recent decision of the Maricopa County Medical Society, it was moved and carried to accept the recommendation of the Executive Committee that a special meeting of the House of Delegates be called for Saturday, October 8, 1983, at which time a resolution changing the bylaws of the Association to provide for a direct membership option would be presented by the Board of Directors.

A report was received from Dr. Baker regarding ongoing discussions between ArMA and the Maricopa County Medical Society about joint billing for membership dues and information sharing.

A status report on resolutions considered by ArMA's House of Delegates during its May 1983 meeting was received. Also the Board reviewed and discussed Resolution 3-83 on the subject of "Granting of Specialty Society Representation," which was not adopted during the May meeting of the House but which was referred back to the Board for further consideration. During discussion of the matter, it was determined that the Arizona Thoracic Society does, in fact, not currently have a primary national board but that the Arizona Society of Allergy does. It was moved and carried that the Board of Directors prepare and submit to the House of Delegates a resolution granting to the Arizona Society of Allergy delegate representation in the House and that such resolution, if possible, be considered by the House during its special meeting on October 8, 1983.

In the absence of Dr. Kettel, Dr. William Scott briefly updated the Board on the current activities at the College of Medicine, including the status of the Cancer Center, medical school enrollment for the fall term, Dr. Kettel's desires regarding any moratorium on student loans from ArMA, as well as encouraging attendance at the planned 10/29/83 joint program to be held in Tucson on the subject of "Prospective Payment."

The Board received and accepted the resignation of Herbert N. Munhall, M.D. as a central District Director and member of the Board and determined that any action to fill the vacancy created would be delayed until the next meeting of the Board to allow time for recommendations.

It was moved and carried to approve and ratify the minutes of the Executive Committee meetings held on May 20 and July 8 and 22, 1983.

Because of the drop in dues income, unsureness of the effect of the Maricopa County Medical Society's recent action, and unbudgeted expenses during 1982 and 1983, the Executive Committee presented two sets of actions to reduce ArMA's cash flow during the rest of 1983 and 1984 until income for 1984 can be accurately predicted (probably February or March).

The first five recommendations were administrative in nature and the responsibility of the Executive Vice President. Those reductions amount to $28,761.00.

The second set of recommendations which require Board of Directors' action, are as follows:

1. Eliminate all food and bar service at Association Board and comittee meetings.
2. Stop paying Maricopa County Medical Society fees for collecting ArMA and AMA dues.
3. Stop funding students to attend AMA meetings.
4. Stop funding residents to attend AMA meetings.
5. Stop funding the three Alternate Delegates for attending AMA meetings
6. Stop funding the President and President-Elect to attend AMA meetings.
7. Approve the developing changes in the employee retirement program as is currently being prepared by the Board's special committee on the retirement program.
8. Reconsider future involvement in amicus curiae proceedings regarding the statute of limitations and other attacks on current malpractice laws.
9. Introduce and vigorously support a resolution in the special House of Delegates' meeting to place a moratorium on the medical student grant program.
10. Authorize an appropriate line of credit with the Valley National Bank with the understanding and authority to borrow from the special "Sponsorship Investment Fund" before borrowing from the bank.
11. Introduce and support a resolution at the special House of Delegates' meeting to increase the 1984 dues.

Saving were estimated at $114,000.00. Extensive discussion ensued over the various recommendations and their impact on the Association's activities, followed by these actions being taken. It was moved and carried to table items 1, 2, 3, 4, 5, 6, 7, 8, 9, and 11 until more information is available on the impact of the Maricopa County Medical Society's direct membership action.

It was moved and carried to rescind the previous action of restricting use of "Sponsorship Funds." So that those funds could be used before borrowing from the bank to cover expenses during the balance of the year.

It was moved and carried that the Arizona Medical Association submit the nomination of William G. Payne, M.D. as its recommendation for the recipient of the AMA's Benjamin Rush Award for citizenship and community service.

Expression of appreciation for grants through the Benevolent and Loan Fund Committee were received from Mr. and Mrs. Bart Carter, Michael Dohm, Stuart W. King, Vincent A. Marino, Rick Weimar, M.D., Amy Jo Thorpe-Swenson, Alan H. Ost and Adam Kartman.

It was moved and carried to confirm the following appointments: Ernesto B. Rodis, M.D. as a member of the Ad Hoc Committee on Hospital Services for the term 1983-84; Daniel T. Field, M.D. and Charles M. Kerr, M.D. as members of the Legislative Committee for the term 1983-86; Mrs. Howard (Mary Eleanor) Holmes, representing the Arizona Medical Association Auxiliary, as a member of the Long Range Planning Committee for the term 1983-84; Joseph W. Hanss, Jr., M.D. as Chairman of the Professional Committee for the term 1983-84; Neil O. Ward, M.D., Chairman, Earl J. Baker, M.D., John C. Bull, M.D., John T. Clymer, M.D., Gary L. Henderson, I.D., John K. Kerr, M.D., Philip Levy, I.D., and Richard Zonis, M.D. all as iembers of the Ad Hoc Membership ommittee for the term 1983-84.

It was moved and carried that the ssociation advise the American ledical Association that ArMA ipports the pluralist approach to eimbursement for physicians services nd opposes any mechanism that would ibstitute a universal method of hysician reimbursement, i.e., idemnity: and, therefore, the Arizona ledical Association does not support ie adoption of Report D (A-83) Payment for Physician's Services" resented by the AMA Council on ledical Services.

It was moved and carried to defer the ecommendation of the Medical conomics Committee regarding the iring of an independent consultant to eview ArMA's insurance program to a iter time.

Future Medical Meetings

ie following institutions and organizations have een accredited for their continuing medical lucation programs by the Arizona Medical ssociation and/or the Accreditation Council for ontinuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
 Lung Association
Walter O. Boswell Memorial Hospital,
 Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
 of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program,
 (THMEP) Tucson
University of Arizona College of Medicine,
 Tucson
Veterans Administration Medical
 Center, Phoenix
Veterans Administration Hospital, Prescott

he accredited institutions and organizations above roduce a variety of continuing medical education rograms. Each accredited institution and rganization is responsible for designating which of iese programs meet ArMA's requirements for category 1 credit. Physicians who participate in rograms which are designated Category 1 by ccredited institutions will receive Category 1 credit oward the ArMA Certificate in CME and the AMA's hysician's Recognition Award.

SEPTEMBER

Advanced Cardiac Life Support Recertification/Provider
September 28-30. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona. Provider course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Speech Pathology
September 30. Scottsdale Hilton, Scottsdale. Sponsor: St. Luke's Hospital and Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 North 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

OCTOBER

The Hospice Concept A Seminar for Physicians
October 1. The Pointe Resort. Sponsor: Phoenix Memorial Hospital and Hospice of the Valley. Contact: Hospice of the Valley, 213 East Willeta, Phoenix, Arizona 85004. Approved for 4 hours of Category 1 credit.

Emergency Update '83
October 6-7. Ramada TowneHouse, Phoenix. Sponsor: Phoenix Baptist Hospital and Medical Center. Contact: Sharon Luczu, Education Department, Phoenix Baptist Hospital and Medical Center, 6025 North 20th Ave., Phoenix, Arizona 85015. Approved for 12 hours of Category 1 credit and 15.6 Contact hours for nurses.

First Annual Arizona Child Custody Institute
October 7 & 8. Scottsdale Hilton, Scottsdale. Sponsor: Family Law Section and Law and Counselling Committee of the State Bar of Arizona, Family Law Committee of the Maricopa Bar Assn., St. Luke's Hospital and Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 N. 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

Identification and Treatment of Substance Abuse Problems—U of A College of Medicine Clinical Seminar Series
October 8. Phoenix Hilton, Phoenix. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 credit.

Update on Diabetes For Physicians and Nurses
October 15. Westward Look Resort, Tucson, Arizona. Sponsor & Contact: Arizona Affiliate American Diabetes Assocation, 7337 North 19th Ave., Phoenix, Arizona 85021.

Current Perspectives I—Bioethics
October 15. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Categroy 1 credit.

Advances in Therapeutics New Drugs
October 21-22. Poco Diablo Resort, Sedona. Sponsor: University of Arizona College of Medicine, Department of Internal Medicine, Office of Continuing Medical Education. Contact: Continuing Medical Education. U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 9.5 hours of Category 1 credit.

Central Neuropsychiatric Association-Sleep and Sleep Disorders
October 21 and 22. Camelback Inn, Paradise Valley. Sponsor: Camelback Hospital. Contact: Dr. George Peabody, 946-4228. Approved for 11 hours of Category 1 credit.

Annual Meeting—Medical Society of the U.S. & Mexico
October 26-29. Morelia, Michoacan, Mexico. Sponsor: Medical Society of the U.S. & Mexico. Contact: Kevin Walker, Executive Secretary, Medical Society of the U.S. & Mexico, 810 West Bethany Home Rd., Phoenix, AZ 85013.

Advanced Cardiac Life Support Recertification/Provider
October 26-28. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona. Provider course approved for 21 hours of Category 1 and Recertification approved for 13 hours.

Geriatric Medicine Today & Tomorrow
October 28-29. Boswell Memorial Hospital, Sun City. Sponsor: Western Division of the American Geriatrics Society. Contact: Marian Richardson, Executive Secretary, 13220 N. 105th Ave., Room 12, Sun City Arizona 85351.

NOVEMBER

3rd Annual Southwestern Poison Symposium
November 4-5. El Conquistador, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 15 hours of Category 1 credit.

Current Perspectives II, Diseases of Arizona, Including Cocci
November 9. Pima County Medical Society Building, Tucson. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Category 1 credit.

New Concepts on Anxiety & Depressive Disorders
November 5. Scottsdale Hilton, Scottsdale. Sponsor: St. Joseph's Hospital & Mental Health Center. Contact: Donald Mesec, M.D., St. Joseph's Hospital & Medical Center, 350 West Thomas Road, Phoenix, AZ 85013. Approved for 8 hours of Category 1 credit.

American College of Physicians Regional CME Meeting
November 11-12. Sheraton El Conquistador, Tucson. Sponsor: American College of Physicians. Contact: Alan L. Gordon, FACP, 2200 N. Third Street, Phoenix, Arizona 85004. Approved for hour per hour Category 1 credit.

Advanced Cardiac Life Support Recertification & Provider
November 16-18. Phoenix. Sponsor: Arizona Affiliate American Heart Association, ACEP. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona 85013. Provider course approved for 21 hours of Category 1 and Recertification course approved for 13 hours.

Prevention and Treatment of Stroke—U. of A. College of Medicine Clinical Seminar Series
November 19. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Az 85724. Approved for 7 hours of Category 1 credit.

Annual Fall Pediatric Conference—Allergy & Asthma
November 26-27. Scottsdale Doubletree. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 8.25 hours of Category 1 credit.

Ericksonian Approaches to Hypnosis & Psychotherapy
November 30-December 4. Phoenix Civic Plaza. Sponsor: Arizona State Hospital and Milton H. Erickson Foundation. Contact: Jeffery K. Zeig, Ph.D., Milton Erickson Foundation, 3606 North 24th Street, Phoenix, Arizona 85020.

DECEMBER

Arthritis and Rheumatic Diseases—U. of A. College of Medicine Clinical Seminar Series
December 3. Phoenix Hilton. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85713. Approved for 7 hours of Category 1 credit.

Problems in the Diagnosis and Management of Breast Cancer
December 5-7. Scottsdale Arizona. Sponsor: American Society of Clinical Pathologists. Contact: Regional Education Activities, 2100 West Harrison Street, Chicago, Illinois 60612. Approved for 19 hours of Category 1 credit.

12 Annual Radiology Seminar
December 9-11. Camelback Inn, Scottsdale. Sponsor: Maricopa Medical Center. Contact: Office of Continuing Medical Education, 2601 E. Roosevelt, Phoenix, Arizona 85006. Approved for 22 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification and Provider
December 14-15. Phoenix. Sponsor: Arizona Affiliate, American Heart Association, ACEP. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider Course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Current Perspectives III Cerebral Vascular Disease
December 14. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Rd., Phoenix, Arizona 85013. Approved for 3½ hours of Category 1.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoneix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008.
Contact: Martin B. Kassell, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff

Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.

Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg. Conf. Rm.

FAR WESTERN MEDICAL ASSOCIATION
January 28—February 4, 1984
Sun Valley, Idaho

Theme: "What's New in Medicine and Surgery"

Spring Scientific Meeting
March 3—17, 1984
Cortina, Italy (first week)

Theme: "Medicine in Europe Today"

Approved for hour per hour Category credit

Please write to:
Far Western Medical Association
P.O. Box 3817
Van Nuys, California 91407
for detailed information

1984 CME CRUISE/CONFERENCES ON LEGAL—MEDICAL ISSUES

Caribbean, Mexican, Hawaiian, Alaskan, Mediterranean. 7—14 days in Winter, Spring, Summer. Approved for 18-24 CME Category 1 credits (AMA/PRA). Distinguished professors. FLY ROUNDTRIP FREE ON CARIBBEAN, MEXICAN, & ALASKAN CRUISES. Excellent group fares on finest ships. Registration limited. Prescheduled in compliance with present IRS requirements. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

The David C. H. Sun Memorial Institute Presents

Three Seminars

featuring **Domeena C. Renshaw, M.D.**
Professor of Psychiatry, Loyola University
Director, Loyola University Sexual Dysfunction Clinic

FOR THE PUBLIC:

"Sex and Seniors"
A Modern View of Ancient Taboos
Thursday, Sept. 22, 1983 — 2:00 p.m. $5 per person
Fairway Recreation Center, Sun City, Arizona

"The Art of Loving and Relating"
Thursday, Sept. 22, 1983 — 7:30 p.m.
$5 per person
Ramada Townehouse, Phoenix, Arizona

FOR PHYSICIANS AND OTHER HEALTH PROFESSIONALS:

"Sexual Offenses"
Rape and Incest
Friday, Sept. 23, 1983 — 8:00 a.m.-5:00 p.m.
$60 registration fee
Ramada Townehouse, 101 W. Clarendon, Phoenix

CME credit applied for

Co-sponsors: St. Luke's Hospital Medical Center
Scottsdale Memorial Hospital
The Phoenix Gazette
Special sponsor: Planned Parenthood of Central and Northern Arizona

Explicit audiovisuals will be used.
Those who may be offended may wish not to attend.

For additional information, contact:
Lynn Baird, Director of Education
Planned Parenthood, 1301 S. 7th Ave., Phoenix, AZ 85007 - (602) 258-4299

europathology of Gross pecimens Conference
hursday, 7:30-8:30 a.m. in the Morgue.
eurology-Neurosurgical
ridays, 8-9 a.m., First Floor Conf. Rm.
europathology or euroradiology Conferences
riday, 9 a.m., Neuropathology in europathology Conference Rm., euroradiology in First Floor Conf. Rm.
eurorehabilitation Conference
uesdays, noon, 8th Floor Conference Rm.
eurosurgical Journal Club
aturdays, 9-11 a.m. in Eighth Floor onference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

0401 Thunderbird Boulevard, Sun City, AZ 5372. Contact: Martha R. Newby, ED.D., irector of Education.

ledical Department Continuing ledical Education
th Wednesday, 12 Noon, C119. May, July, ept. & Nov.
umor Board
ast Thursday of the month, 12 Noon, duc. Center Classroom I & II, May, July, ept, & Nov.
urgical Department CME
th Friday, 7 a.m., Educ. Center lassrooms I & II. Contact: Brian pdegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Wednesday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.
Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

FITNESS, INJURY AND SPORTS MEDICINE

October 7-8, 1983
Sheraton Old Town, Albuquerque, N.M.

CME Credits

— The Psychology of Sports
— The Role of Tests and Screening in Athletics
— The Role of Nutrition in Physical Fitness
— Women in Sports: Myths and Future Status
— Stress: Relief Through Athletic Participation
— Children in Sports: Problems, Injuries and Hazards
— Drugs and Athletic Performance
— Current Treatment for Musculoskeletal Injuries
— Head & Neck Injuries and Treatment
— Medical Illness and Sports Participation
— Overuse Injuries
— Eye Injuries in Sports: Treatment and Prevention

For information:
Sports Medicine Committee
Albuquerque & Bernalillo County
Medical Association
303 San Mateo Blvd. NE #203
Albuquerque, N.M. 87108
(505) 268-2446

Also visit the
Albuquerque International Balloon Fiesta
October 1-9, 1983

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.
Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
1st & 3rd Monday, 12 Noon.
Medicine GI
2nd & 4th Monday, 12 Noon.
Medicine Dermatology
5th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.
Medicine Neurology
1st & 3rd Tuesday, 12 Noon.
Medicine Renal
2nd Tuesday, 12 Noon.
Emergency Medicine
4th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
4th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..
Review of GYN Pathology Slides
Weekly, Tuesday, 4 p.m.
Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.
Patholgy Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
1st Wednesday, 11 a.m.
Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
1st Wednesday, 12 Noon.

OLE!

MEDICAL SOCIETY OF THE U.S. AND MEXICO

XXXI ANNUAL MEETING
HOTEL CALINDA &
MORELIA CONVENTION CENTER

PROGRAM

-depth lectures on experimental endoscopy vistas, mutual Mexican-American health problems, and new methods of imaging diagnosis; also three medical panels and 18 general papers.

ocial activites include: Opening Night Reception and Dinner, Cathedral Organ Concert and Morelia famed Choir, luncheon-trip to Lake Patzcuaro, Presidential Dinner Ball and Mexican fashion show, farewell luncheon.

OTE: Registration includes all scientific and social events, room for three nights at the Hotel Calinda in Morelia, and bus transportation Guadalajara-Morelia-Guadalajara and for all sponsored events in Morelia.

OCTOBER 25-29, 1983
MORELIA, MICHOACAN, MEXICO

TRANSPORTATION PACKAGE
VIA AEROMEXICO

Tuesday, October 25—Leave Tucson for Guadalajara, overnight at El Tapatio

Wednesday, October 26—Buses from Guadalajara to Morelia

Saturday, October 29—Buses from Morelia to Guadalajara, overnight at El Tapatio

Sunday, October 30—Flight to Tucson

Cost includes air fare via Aeromexico (Tucson-Guadalajara-Tucson) two nights lodging at El Tapatio, all ground transfers, but **no** meals. Prices are subject to change without prior notice. We suggest prompt action to guarantee above prices. Reservations must be made by 9/6/83 and should be directed to Kathy Gross at Travel Studio, as indicated on form below.

Ask about the optional trip to Mexico City, October 22-26!

CONVENTION
REGISTRATION FORM

ame: ______________________________

ddress: ______________________________

egistration Fees:

octor—Member Single	$ 200.00
Member & Spouse	$ 300.00
lon-Member Single	$ 250.00
lon-Member & Spouse	$ 350.00

lease reserve ________ seats for bus trip from uadalajara to Morelia leaving mid-morning October 26, 983.

ly check in the amount of $ ________ is enclosed. hecks should be made payable to the **Medical Society of he United States and Mexico**. Send check and registration orm to Mr. Kevin Walker, Executive Secretary, Medical ociety of the U.S. & Mexico, 810 West Bethany Home oad, Phoenix, Arizona 85013.

TRANSPORTATION
RESERVATIONS FORM

Name: ______________________________

Address: ______________________________

Transportation Package:

One Person	$ 320.00
Two Persons	$ 542.00

If leaving from Phoenix, add $ 50.00 per person.

Please reserve ________ spaces for the trip to Guadalajara.

Please reserve ________ spaces for the optional trip to Mexico City. Four nights and air fare for an additional $ 367.00 per couple.

My check in the amount of $________ is enclosed. Checks should be made payable to **Travel Studio**. Send check and registration form to Ms. Kathy Gross, CTC, Travel Studio, 7816 N. 12th Street, Phoenix, Arizona 85020.

Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.

Medicine Mortality
3rd Wednesday, 12 Noon.

Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.

Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.

Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.

Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.

Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..

Anesthes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7 :30 a.m.

Anesthesiology Journal Club
4th Thursday, 8 a.m.

Ambulatory Pediatarics
Weekly, Thursday, 8 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8 a.m.

Burn Mortality Conference
4th Thursday, 8 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.

Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.

OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.

Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12 :30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201. Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.

Otolaryngology Grand Rounds
4th Wednesday, 4-5 p.m., Conference Rm. A, Contact: N. Wendell Todd, M.D.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Loung

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.

Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.

Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.r Pediatric Department.

Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.

ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.

Medical Grand Rounds
Weekly, Wednesday, 8 a.m., 1st Floor Cor Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 8 a.m., PIMC.

Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.

Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Sta Office. Approved for Category 1 credit.

Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium

Surgery Department Conference
4th Monday, 12 Noon, Auditorium.

Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.

Ophthalmology Case
2nd Tuesday, 7:30 a.m.

Ophthalmology Society
4th Tuesday, 6 p.m., Auditorium Contact: Leonard Joffe, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ. Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.

Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.

Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.

Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.

Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.

ulmonary Case Conferences
st Thursday, 7:30 a.m., Phillips
uditorium.
sychiatry Conference
d Thursday, 7 a.m., Auditorium.
**ombined Medical General Practice
onference**
st Friday, 12:15 p.m., Auditorium.
oxicology Grand Rounds
nd Friday, 7:30 a.m., Auditorium.
phthalmology Conference
st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

01 W. St. Mary's Road, Tucson, AZ
703. Contact: see below.
**onthly Specialty Conference — Dept. of
irgery**
t Monday, 7:30 a.m., Century Rm. A.,
ontact: Med. Staff Office.
**rand Rounds: Medical Surgical, Family
actice, Pathology, Radiology**
eekly, Thursday.
nergency Medicine Lectures
eekly, Thursday, 8 a.m., Century Rm. A.
ental Health Update
t Friday, 11:30-1:00 p.m., Century Rm. A.
ardiology Conference
eekly, Friday, 8:00-9:00 a.m., Century
n., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

01 E. Grant Road, Tucson, AZ 85716.
ntact: Eric G. Ramsay, M.D. Approved for
tegory 1 credit.
rdiology Conference
t, 3rd, & 5th Mondays, 12 Noon, Contact:
Maximov, M.D.
rmatology Conference
n Monday, 5:00 p.m., Contact:
Miller, M.D.
docrinology Conference
n Monday, 12 Noon, Contact:
Parker, M.D.
phrology Conference
d Monday, 12 Noon, Contact:
ephen Seltzer.
ychiatry Department Meeting
d Monday, 12 Noon, Contact:
oward Winkler, M.D.
rinatal Conference
d Tuesday, 7:00 a.m.
rgical Conference
d Tuesday, 7:15 a.m.
matology Conference
n Tuesday, 12 Noon, Contact:
erald Giordano, M.D.
lmonary/Infectious Disease Conference
eekly except 4th, Tuesday, 12 Noon,
ontact: B. Friedman, M.D.
thopedic Conference
t Tuesday, 7:30 p.m., Contact:
y Katz, M.D.
diatric Grand Rounds
t & 3rd Tuesday, 12:30 p.m., Contact:
. Lightner.
urophysiology Conference
d Tuesday, 5 p.m., Contact:
obert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact:
Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April,
July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact:
M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact:
H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact:
N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact:
Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact:
Charles Sanner, M.D.
Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact:
S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact:
Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact:
R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road,
Phoenix, AZ 85012. Contact: Alfred
Heilbrunn, M.D. Approved for Category 1
credit.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 p.m., Rm. 3134,
Contact: Dr. Kozarek, Ext 413. Dr. Mertz,
Ext 493.
Cancer Symposium
2nd Monday, 3-4 p.m., Rm T5, Contact:
Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact:
Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact:
Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs.
Sanowski & Schaffner, after GI Grand
Rounds, Rm. T-5.
**GI Radiology Clinical Correlation
Conference**
1st and 3rd Tuesday, 12:00 noon, Rm. T-5,
Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5,
Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8-9 a.m., Rm 2410,
Contact: Drs. Haddad & Kivirand, Ext. 417.
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m.,
Room 4115, Contact: Dr. Rohwedder, Ext.
388.
Cardiology Conference
2nd Thursday, 1 p.m., Room T-5, Contact:
Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115
Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11 a.m., Rm.
T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11 a.m., Room T-5, Contact:
Dr. Zeller.
Urology Conference
Weekly Friday. 12-1 p.m., Room 3134,
Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8-9 a.m., Rm. 3134, Contact:
Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed
below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.
Surgical Rounds
4th Thursday, 10 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ
85723. Contacts listed below. Approved for
Category 1 credit.
Medical/Surgical Chest Conference
Weekly, Tuesday, 2 p.m., Contact:
Dr. Young.
Medical Grand Rounds
Weekly, Wed., 12-1:00 p.m., VA Hospital
Staff Conf. Rm. & (AHSC), Contact:
Jay Smith, M.D.
Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact:
Dr. Putnam.
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 p.m., Rm.
N318, Contact: Dept. of Internal Medicine.
Grand Rounds
Weekly, Thursday, 11 a.m., Bldg. 107,
Contact: J. Fitzharris, D.O.
Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.
Neurology Grand Rounds
Weekly, Friday, 12 p.m., Contact:
Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact:
Alan Winfield, M.D. Approved for Category
1 credit.
Radiology Conference
1st Tuesday, 7:00 a.m.
Operation Outreach
2nd Tuesday, 6:30 p.m.
Pathology Conference
4th Tuesday, 7:00 a.m.
Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine,
Tucson, AZ 85724. Robert M. Anderson,
M.D., Dir. of CME. Contact: See below.
Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4-5 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4-5 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12-1 p.m., Contact: Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd. & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12-1 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7-9 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4-5 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12 p.m., AHSC, Contact:
Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5-6 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conferenc
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 550

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
Weekly, Tuesday, 4-6 p.m., AHSC, Conta
Dr. J. Goldstone.

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And what is more reassuring to an excessively anxious patient than medication that promptly starts to relieve his discomforting symptoms? Valium® (diazepam/Roche) begins working within 30 to 90 minutes. Patients continue to improve in just a few days, and relief continues throughout the course of treatment.

There are other important benefits with Valium as well—along with its broad clinical range, Valium has an efficacy/safety profile that few, if any, drugs can match. This record has been achieved with extensive clinical experience, undoubtedly including yours. And, as you must have observed, side effects more serious than drowsiness, fatigue or ataxia rarely occur. Nevertheless, as with any CNS-acting agent, patients should be cautioned about driving, operating hazardous machinery or ingesting alcohol or other CNS-depressant drugs while taking Valium.

Yet another benefit Valium affords is flexibility. Available in 2-mg, 5-mg and 10-mg scored tablets, Valium enables you to titrate dosage to individual patient needs. For the geriatric patient, a starting dosage of 2 to 2½ mg once or twice a day is recommended. And, for patients who forget or skip medication, you can prescribe Valrelease™ (diazepam/Roche) 15-mg slow-release capsules, knowing that Valrelease will assure all the benefits of Valium 5 mg *t.i.d.* with the convenience of once-a-day dosage.

Discontinuation of Valium (or Valrelease) is typically as smooth as its start in short-term therapy. However, Valium and Valrelease should be discontinued gradually after more extended treatment. As you diminish dosage, the built-in tapering action of Valium and Valrelease will help avoid rapidly recurring anxiety symptoms and symptoms of withdrawal, and will help ease the patient's transition to independent coping when therapeutic goals have been achieved.

...that's one of the unique benefits of

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For a summary of product information, please turn the page. ROCHE®

Valium® (diazepam/Roche) Ⓒ Tablets
Valrelease™ (diazepam/Roche) Ⓒ slow-release Capsules
Injectable Valium® (diazepam/Roche) Ⓒ

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindications: Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

> *Usage in Pregnancy:* **Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

ORAL Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

INJECTABLE *To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly, taking at least one minute for each 5 mg (1 ml) given; do not use small veins,* i.e., *dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, *i.e.*, phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

INJECTABLE Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

Adverse Reactions: Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

INJECTABLE Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

Dosage: Individualize for maximum beneficial effect.

ORAL *Adults:* Anxiety disorders, relief of symptoms of anxiety—Valium (diazepam/Roche) tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

Geriatric or debilitated patients: Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

Children: Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

INJECTABLE Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.)

For dosages in infants and children see below; have resuscitative facilities available.

I.M. use: by deep injection into the muscle.

I.V. use: inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., *dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children *administer I.V. slowly*; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

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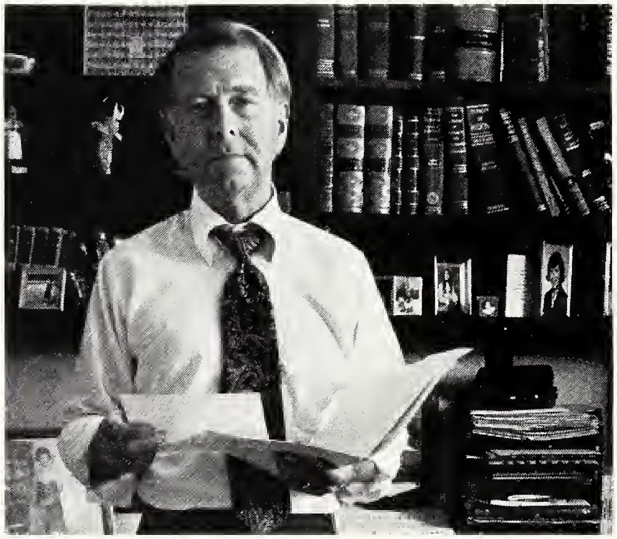

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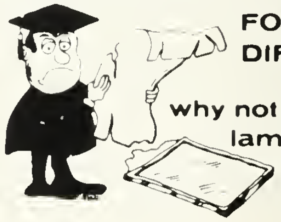

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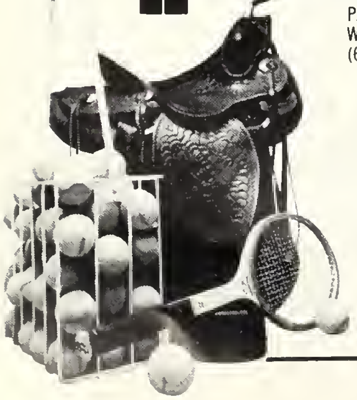

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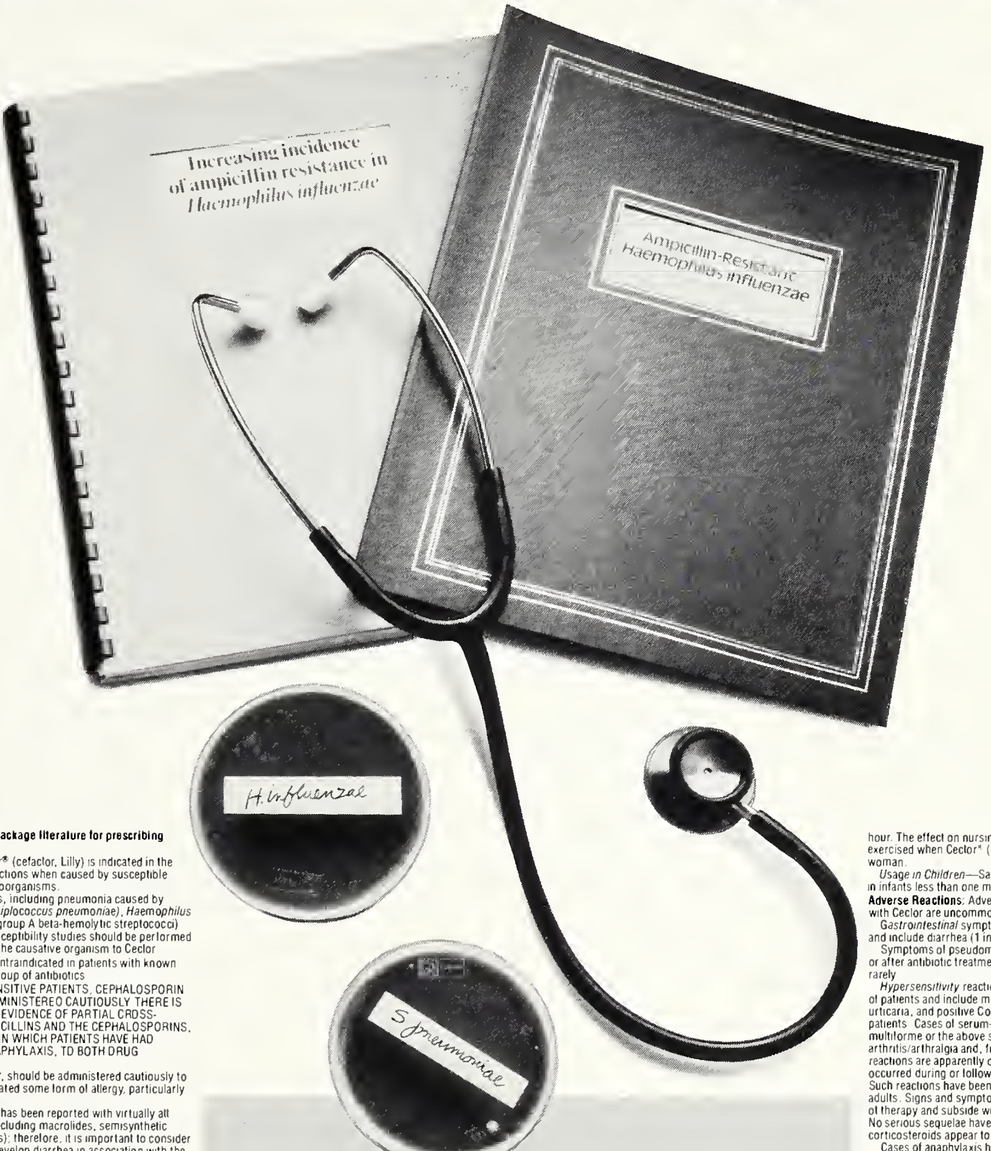
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Ampicillin-Resistant Haemophilus influenzae
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Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

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Brief Summary. Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms.

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C difficile* Other causes of colitis should be ruled out

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g , pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses Average levels were 0.18, 0 20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman.

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2 5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

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* Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S pneumoniae* or *H influenzae* [8]

Note Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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There are other important benefits with Valium as well—along with its broad clinical range, Valium has an efficacy/safety profile that few, if any, drugs can match. This record has been achieved with extensive clinical experience, undoubtedly including yours. And, as you must have observed, side effects more serious than drowsiness, fatigue or ataxia rarely occur. Nevertheless, as with any CNS-acting agent, patients should be cautioned about driving, operating hazardous machinery or ingesting alcohol or other CNS-depressant drugs while taking Valium.

Yet another benefit Valium affords is flexibility. Available in 2-mg, 5-mg and 10-mg scored tablets, Valium enables you to titrate dosage to individual patient needs. For the geriatric patient, a starting dosage of 2 to 2½ mg once or twice a day is recommended. And, for patients who forget or skip medication, you can prescribe Valrelease™ (diazepam/Roche) 15-mg slow-release capsules, knowing that Valrelease will assure all the benefits of Valium 5 mg *t.i.d.* with the convenience of once-a-day dosage.

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For a summary of product information, please turn the page. ROCHE®

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Valrelease™ (diazepam/Roche) Ⓝ slow-release Capsules
Injectable Valium® (diazepam/Roche) Ⓝ

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindications: Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

> ***Usage in Pregnancy*: Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

ORAL Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication, abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

INJECTABLE *To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used IV: inject slowly, taking at least one minute for each 5 mg (1 ml) given; do not use small veins,* i.e., *dorsum of hand or wrist, use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly IV, it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea, have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, *i.e.*, phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

INJECTABLE Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

Adverse Reactions: Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

INJECTABLE Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia.

In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

Dosage: Individualize for maximum beneficial effect.

ORAL *Adults*: Anxiety disorders, relief of symptoms of anxiety—Valium (diazepam/Roche) tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

Geriatric or debilitated patients: Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

Children: Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

INJECTABLE Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.)

For dosages in infants and children see below; have resuscitative facilities available.

I.M. use: by deep injection into the muscle.

I.V. use: inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., *dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children *administer I.V. slowly*; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

Management of Overdosage: Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

How Supplied:

ORAL Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

INJECTABLE Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.

ROCHE®

Cardiology

'Torsades De Pointes" An Atypical Ventricular Tachyarrhythmia

Ralph M. Kunkel, M.D.
Kenneth B. Desser, M.D.
Alberto Benchimol, M.D.

Editor:
Kenneth B. Desser, M.D.

Torsades de pointes is an unusual type of ventricular rrhythmia which was first described in 1966 by Dessertenne in the French literature. The name is descriptive and the literal translation means twisting of ne points. In the English literature it has been variably alled cardiac ballet, multiform ventricular flutter, aroxysmal ventricular fibrillation, and transient ecurrent ventricular fibrillation. The most commonly mployed term for this phenomenon is atypical entricular tachycardia (AVT). This tachyarrhythmia is istinctive in its unusual response to conventional nerapy and by its appearance. A unique property of AVT is its spontaneous resolution, a somewhat uncommon characteristic of the usual form of ventricular brillation.

Diagnosis

Individual bursts of AVT generally comprise from 5 to 20 beats and the QRS morphology changes from beat to beat as the QRS axis gradually changes polarity in a sinusoidial fashion (Figure). The QRS wave-form is usually more rounded on the side opposite the points. During sinus rhythm there is generally a prolonged Q-T interval with values exceeding 0.60 second commonly observed. On occasion, AVT may intervene during runs of monomorphic ventricular tachycardia. Although case reports have described AVT in the absence of Q-T interval prolongation, many established investigators require the latter as a requisite for the diagnosis of true torsades de pointes. From a practical standpoint, the AVT associated with a normal Q-T interval often responds to conventional therapy. Conversely, the appearance of monomorphic ventricular tachycardia in the setting of a prolonged Q-T interval may respond to therapy which is specific for AVT.[1] It has been suggested that a prolonged Q-T interval in the first sinus beat following a premature ventricular depolarization may be the only clue for correct diagnosis.

Etiology

Prolongation of the Q-T interval is due to an increased dispersion of ventricular repolarization and this is accentuated by slow heart rates. Incipient AVT is often heralded by progressive widening of the QRS complex or Q-T interval. Individual bouts of AVT are often initiated by ventricular extrasystoles with long coupling intervals.[2]

The electrophysiologic basis for AVT has not yet been elucidated. In isolated porcine hearts, the characteristic electrocardiographic pattern of AVT can be reproduced by simultaneous stimulation of the right and left ventricles.[3] Using a combination of toxic quinidine levels, bursts of ventricular pacing and in some cases acute ischemia, AVT could be induced in dogs. Maps of cardiac activation indicated two or more areas of epicardial breakthrough. When activating wave-fronts compete for myocardial depolarization and fuse with each other, a surface electrocardiogram characteristic of AVT can be recorded.[4] Central nervous system disease in man is associated with multiple rhythm disturbances and marked changes in the S-T segment and T waves.[5] Unilateral stimulation of the left stellate ganglion in dogs will lengthen ventricular reploraization with prolongation of the Q-T interval and a reduction in fibrillation threshold. In humans with a prolonged Q-T interval and AVT, surgical blockage of the left stellate ganglion has occasionally shortened the Q-T interval with resolution of the arrhythmia.[6]

Two congenital syndromes have been described as causes of a prolonged Q-T interval and AVT. When associated with congenital deafness, the phenomenon is known as the Jervell-Lange-Nielsen syndrome and without deafness, the Romano-Ward syndrome. An acquired idiopathic sporadic type has also been described.[7]

Any factor capable of prolonging the Q-T interval can

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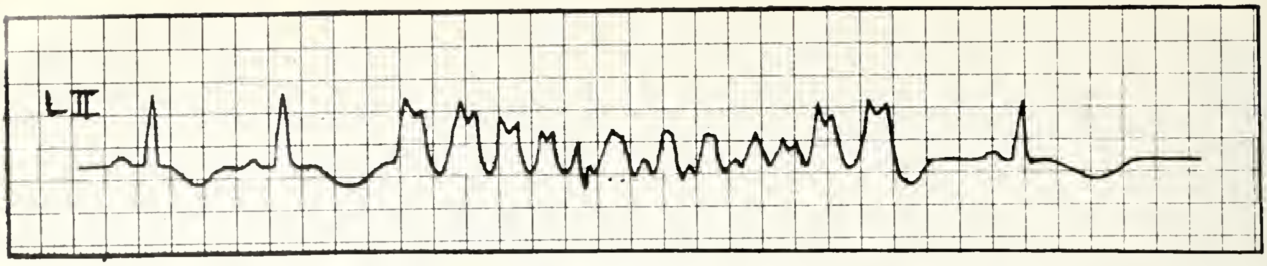
rom: The Institute for Cardiovascular Diseases, Good Samaritan ledical Center, 1111 East McDowell Road, Phoenix, Arziona 85006. eprint requests to Alberto Benchimol, M.D., Good Samaritan ledical Center, P. O. Box 2989, Phoenix, Arizona 85062. Supported in art by the E. Nichols Memorial Fund and The Institute for ardiovascular Diseases, Phoenix, Arizona.



Figure

Lead II of the ECG reveals a prolonged Q-T interval during sinus rhythm followed by a burst of AVT. Note the change in polarity of the QRS compl

induce or aggravate a preexisting tendency to AVT. AVT has been associated with the bradycardia observed in sick sinus syndrome, and second or third degree heart block. The most frequent cause of AVT in the adult is the administration of antiarrhythmic medication and class I agents are usually implicated.[8] When caused by medication, the AVT may occur as an idiosyncratic or dose dependent response. The most common offending agent is quinidine and the provoked AVT accounts for most cases of "quinidine syncope." The tachyarrhythmia has also arisen as a consequence of therapy with procainamide and disopyramide.[9,10] In therapeutic doses, lidocaine has not been described as a causative factor but may evoke AVT at toxic levels. Reports of AVT induced by new antiarrhythmic agents including amiodarone,[11,12] mexiletine[13] and aprindine[14] are appearing. Although AVT is often observed in subjects without demonstrable heart disease, associations have been proposed for myocarditis, mitral valve prolapse and variant anginia pectoris.[15]

Other pharmacologic agents which can produce AVT include psychotropic drugs, the phenothiazines and tricyclics. Electrolyte disturbances such as hypokalemia and hypomagnesemia have resulted in AVT. Hypocalcemia is associated with prolongation of the isoelectric Q-T segment rather than the T wave proper and has not been reported to cause AVT. Miscellaneous etiologies include subarachnoid hemorrhage[16] organophosphate poisoning[17] and liquid protein diets.[18]

Treatment

Although individual bursts of AVT may terminate spontaneously, ventricular fibrillation and death are always possible. In cases of cardiac arrest or hemodynamic compromise, immediate cardioversion or defibrillation is required. The usual cardiopulmonary resuscitive efforts however, are seldom of sustaining benefit due to the arrhythmia's propensity to recur. Prior to the development of appropriate management, we personally observed a patient with AVT who required over fifty precordial countershocks in a 24-hour period.

In most cases of AVT in adults, an inciting cause can be identified and corrected. Acceleration of the heart rate with its attendant increase in ventricular repolarization and shortening of the Q-T interval is the mainstay of therapy. In this regard, atropine, isoproterenol, and pacing are accepted modes of treatment. Atropine, because of its short half life, is not usually beneficial. Isoproterenol, by a direct cardiac action and the indirect effect of increasing heart rate, shortens the Q-T interva Although frequently effective, intravenous isoproterenol may be contraindicated in the presence o symptomatic coronary artery disease or hypertension

Pacing is generally effective as an acute and occasiona chronic therapy for AVT.[19,20] Atrial pacing is usuall recommended, yet ventricular pacing may be require due to atrial lead instability or A-V block. The pacin should initially be rapid and then gradually reduce until the lowest effective rate is found which preclude AVT. Pacing is continued until the inciting cause ha been corrected. Lidocaine is not contraindicated but generally of little benefit for the treatment of AV Bretylium may be useful for therapy and the use of th agent requires further investigation. Drugs capable o prolonging the Q-T interval, such as quinidine, disopyramide and procainamide are contraindicate Symptomatic patients with persistent Q-T prolongatio after identification of causative factors can be treate with propranolol, which is thought to act by inhibitin sympathetic traffic. Surgical sympathectomy has bee recommended for selected refractory cases but is drastic measure with unpredictable results.

Conclusions

AVT (torsades de pointes) is a potentially lethal ve tricular arrhythmia. The relationship of AVT to the usu varieties of ventricular tachycardia or fibrillation unclear. AVT is often caused by those agents use specifically to control ventricular tachyarrhythmia Should a clinician fail to recognize AVT, drugs such quinidine or procainamide might be invoked, thereb exacerbating the arrhythmia. Initially considered a electrocardiographic curiosity, AVT is being recognize with increased frequency and specific therapy for th condition is available.

Acknowledgement

We wish to acknowledge the technical assistance Carole Crevier, Jennie Goff and Mary Throop.

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Medical Genetics

At Increased Risk: Down Syndrome Relatives

Frederick Hecht, M.D.
Barbara K. Hecht, Ph.D.
Richard C. Wagner, M.S.

Editor:
Frederick Hecht, M.D.

Abstract

Parents of a child with Down Syndrome (mongolism) are at increased risk of Down syndrome with each subsequent pregnancy. It is accepted, therefore, that Down syndrome parents should be offered prenatal diagnosis with all future pregnancies. Brothers and sisters of Down syndrome individuals are themselves at increased risk for having a Down syndrome child, as are other relatives. Public health calculations of risks for Down syndrome indicate that more than 29,000 persons in the Phoenix-metro area and at least 50,000 persons in Arizona are at elevated risk for Down syndrome. Amniocentesis should be provided to brothers, sisters, aunts, uncles, nephews and nieces, since they are at increased risk for Down syndrome. So are other relatives. This is a new indication for prenatal genetic diagnosis.

The points of this article are that: 1) relatives of Down syndrome children are at increased risk for having affected children and 2) amniocentesis should be provided to them.

From: The Genetics Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281. Supported in part through funds provided by the U. S. Department of Health and Human Services, Bureau of Health Care Delivery and Assistance, for an Arizona Genetics Program; and by the Arizona State Legislature via the Center for Disease Control, Arizona Department of Health Services for investigation of birth defects in Arizona. Reprint request to Frederick Hecht, M.D., The Genetics Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281.

Background

Down syndrome (mongolism) is the most frequent chromosome cause of mental retardation and congenital malformation. The incidence of Down syndrome is about one in 666 births, (0.15%). In Arizona with about 52,000 births annually, this translates into about 78 new cases of Down syndrome each year.

The basis for Down syndrome is an extra chromosome: trisomy 21. Ninety-five percent of cases have trisomy 21. The residual five percent have chromosome mosaicism (a mixture of trisomy 21 and normal cells) or translocations involving chromosome 21. These add up to the same thing as trisomy 21, namely, an extra version of the long arm of chromosome 21, which is responsible for Down syndrome.

First, Second, and Third Degree Relatives in Down Syndrome Families

First degree relatives: Parents and sibs of a Down syndrome child are first degree relatives of that child. Their coefficient of relationship is 0.5, since they share 50% of their genes in common. Brothers and sisters are each at 1% to 2% risk of having Down syndrome.

Second degree relatives: Second degree relatives of a Down syndrome child include aunts, uncles, nieces and nephews. The coefficient of relationship for second degree relatives is 0.25, since they share 25% of genes in common.

Third degree relatives: Third degree relatives of a Down syndrome person include cousins and great nephews and nieces (for example, a niece's children). The coefficient of relationship for third degree relatives is 0.125. These relationships are summarized in Table 1.

Risks for First Degree Relatives for Down Syndrome

It is now established that first degree relatives such as sibs are at heightened risk of Down syndrome.[1,2] This risk is 1% to 2%. To take a case: A young woman was having her first child. There was no family history of Down syndrome. Her risk was therefore, very low: One in 2500. She had a Down syndrome baby. The risk for her next child to have Down syndrome jumps to between one and 50 and one in 100: a 25 to 50-fold rise in risk.

Comment: The elevated risk for first degree relatives warrants provision of amniocentesis to establish genetic diagnosis. In 98 or 99 cases in 100, this will allow reassurance.

Risks for Second and Third Degree Relatives for Down Syndrome

An analysis of 219 families with a Down syndrome child was done.[3] All families had a child with trisomy 21. Pedigrees included first and second degree relatives. Control data were obtained in 247 families seen with no chromosome abnormality for genetic counseling. The resultant data are presented in Table 2.

The risk for first degree relatives was, as expected, between 1% and 2%: 1.65%. The risk for second degree relatives was 0.65%. Note that the general population birth incidence of Down syndrome is 0.15%. The risk for third degree relatives was 0.26%.

Table 1
First, Second, and Third Degree Relatives at Risk for Down Syndrome

Degree of Relationship	Coefficient of Relationship*	Relatives at Risk**
First degree	0.500	*Sibs*
Second degree	0.250	*Nephews and niec* Uncles and aunts
Third degree	0.125	*First cousins* *Nephews' and nieces' children*

* = Proportion of all genes shared with Down syndrom child.
** = Individuals most important in genetic counseling are italics.

Table 2
Risk of Down Syndrome in Relatives

Relation to Proband*	Proband with Down Syndrome (Test)	Proband with Not Down Syndrome (Control)
First degree		
No. ascertained	303	332
No. with Down S.	5	0
% with Down S.	1.65%	1.00%
Second degree		
N. acertained	1,309	1,524
No. with Down S.	9	3
% with Down S.	0.657%	0.20%
Third degree		
No. ascertained	3,887	5,197
No. with Down S.	10	4
% with Down S.	0.26%	0.08%

*Probands (index case) in Down syndrome family group ha trisomy 21, whereas probands in control family do n Numbers from ref. 3.

Relative Risks for Down Syndrome

The risk of Down syndrome is greater in relatives tha in controls (Table 2). However, as expected with a mult factorial disorder, the risk decreases with the degree relationship. The relative risk for relatives are shown i Table 3.

A first degree relative has an 11-fold increase in risk. second degree relative has a 4-fold rise in risk. And third degree relative has about a 2-fold increase in ris for Down syndrome.

Expansion of Risks to the Extended Family with a Dow Syndrome Child

The fact that first degree, second and third degre relatives are at increased risk of having a Down sy drome child has medical implications. Given an averag sibship size in a family of 2.0 (children per couple), persons are at increased risk. With an average sibsh size of 2.5, more than 25 persons are at risk because the birth of one Down's syndrome child. And, if th mean sibship size is 3.0 (children per couple), 34 perso are at increased risk for Down syndrome.

Table 3
Relative Risks for Down Syndrome

roup	%	1 in ___	Relative Increased Risk*
rst degree relatives	1.65%	1 in 61	11-fold
cond degree relatives	0.65%	1 in 154	4-fold
ird degree relatives	0.26%	1 in 384	2-fold
neral population	0.15%	1 in 666	

isk relative to risk for the general population.

Table 4
Expansion of Risks for Down Syndrome

sship ze*	No. of Relatives** 1	2	3	At Risk in the Population*** Total	%	1 in ___
)	1	4	8	13	1.95%	1 in 51 persons
5	1.5	6.75	16.88	25.13	3.77%	1 in 27 persons
)	2	10	30	42	6.30%	1 in 16 persons

**Number of children per couple.*
**First, second, and third degree relatives.*
**Based on general population incidence at birth of 1 in 666 (0.15%) births for Down Syndrome.*

Table 5
Public Health Expansion of Risks for Down Syndrome in Arizona

Sibship Size*	At Risk in General Population**	Phoenicians at Risk***	Arizonans at Risk****
2.0	1.95%	29,250	53,009
2.5	3.77%	56,550	102,485
3.0	6.30%	94,500	171,261

**Number of children per couple.*
**See Table 4.*
**Based on Phoenix-metro population of 1.5 million.*
**Based on the 1980 census of Arizona with 2,718,425 people.*

These data translate into one in 51, one in 27 and one 20 persons respectively in the general population able 4).

ublic Health Expansion of Risks for Down Syndrome in rizona

For public health purposes, it is valuable to target the rt of the population at greatest risk for a disease. The latives of Down syndrome individuals constitute a rget group.

The number of relatives at risk for Down syndrome are function of sibship size. As shown in Table 4, a sibship 2.0 (children per couple) places 1.95% of the general opulation at risk; a sibship of 2.5 (children per couple) fects 3.77% of the general population; and a sibship ze of 3.0 (children per couple) puts 6.30% of the opulation at elevated risk for Down syndrome.

With about 1.5 million people in the Phoenix-metro ea, more than 29,000 people are at increased risk for a own syndrome birth.

In Arizona (based on the 1980 census with 2,718,425 people) over 50,000 people are at elevated risk for Down syndrome (Table 5).

Clearly with those numbers of people, it is most appropriate to provide services initially to those at highest risk, namely first degree relatives; then to persons at intermediate relative risk, namely second degree relatives; and finally to those with the least increased risk, namely third degree relatives.

Northern Arizona (Late Childbearing): Target Area

The practice of late childbearing varies according to the county in Arizona.[4] Northern Arizona counties (Navajo, Apache and Coconino counties) have unusually high rates of late reproduction, as reflected by the proportions of births to women 35 years of age or older.

The rate of Down syndrome births is dependent upon maternal age: the age of the mother at birth. With increasing maternal age, the incidence of Down syndrome rises.

One target area in Arizona for Down syndrome information should, therefore, be Northern Arizona. In particular, people living in Navajo, Apache and Cononino counties should be informed of the maternal age risk and, correspondingly, provided with the option of amniocentesis.

Safety of Amniocentesis

The majority of anmiocenteses for prenatal diagnosis yield normal results. These provide reassurance in 98% of cases. The minority of amniocenteses provide evidence for abnormality. Overall, 2% of cases are abnormal.

The recommended sequence of events is: 1) offer amniocentesis; 2) if the amniocentesis is normal, reassure the family; 3) if the amniocentesis is abnormal, indicate the nature of the abnormality and the options; 4) take matters one at a time as with any diagnostic procedure.

With amniocentesis, the risk/benefit ratio must be weighed. What is the risk today of amniocentesis?

The greater the experience of the physician, the lower is the risk of amniocentesis. With little experience (ten midtrimester amniocenteses), the risk is 3% for an inadvertently induced abortion. With some experience (10 to 50 midtrimester amniocenteses) the risk drops to 1.5%. With considerable experience (50 amniocenteses in midtrimester), the risk of amniocentesis is insignificant and statistically undetectable.[5]

Recommendations in Practice

We recommend the following procedure:

1. The primary physician should obtain family history as regards Down syndrome (mongolism);
2. If there is a positive family history of Down syndrome, advise the patient of the facts concerning their risks for having a Down syndrome child;
3. Offer amniocentesis;
4. Refer the patient for genetic counseling;
5. Level II ultrasound and amniocentesis; and
6. Amniocentesis.

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Neurology

Measurement of Cerebral Blood Flow With Ordinary Nuclear Medicine Equipment

Dennis D. Patton, M.D.
Philip R. Weinstein, M.D.
Gordon R. Cardell
James M. Woolfenden, M.D.

Editors:
James L. Frey, M.D.
J. Michael Powers, M.D.
Lawrence Z. Stern, M.D.

"Is this patient's brain getting enough blood?" Physicians have been asking this question for many years, yet it has been only in the last twenty years or so that we have begun to have access to noninvasive reliable techniques for measuring brain blood flow. (The term "blood flow" is used loosely in the medica literature to describe either vessel flow or tissue perfusion. This article uses "blood flow" in the latter sense.) We wish to describe a noninvasive radiotracer technique for measuring both regional and globa cerebral blood flow that was developed at the University of Arizona Health Sciences Center.

Most techniques for measuring cerebral blood flow (CBF) or regional cerebral blood flow (rCBF) involve measuring the rate of washout of some inert substance from the brain. The most commonly used substance is a radioactive isotope of the inert gas xenon, xenon-133 Xenon is chemically and biologically inert. The radioisotope Xe-133 has a half-life of about five days, and gives off gamma rays which can be detected from outside the body. It is inexpensive and readily available The radiation dose incurred from Xe-133 CBF studies is fairly low, about one rem to the lungs and 100 millirem to the whole body. (A PA and lateral chest x-ray deliver about 50 millirem.)

From: The Division of Nuclear Medicine and the Division o Neurosurgery, University of Arizona College of Medicine, Tucson Arizona 85724. This work was supported in part by NCI Grant No. 5PO CA 23417-05 and by NIH BRSG Grant No. 507 RRO7002. Reprin request to Dennis D. Patton, M.D., Division of Nuclear Medicine Arizona Health Sciences Center, Tucson, Arizona 85724.

The most widely used Xe-133 technique for measuring cerebral blood flow was reported in its present form by Obrist and coworkers in 1967.[1] Obrist technique the patient inhales Xe-133 for one to several minutes, in order to build up an equilibrium concentration in the body (including the brain), after which the patient breathes into an exhaust system from which the Xe-133 does not return. Radiation detectors (probes) po-sitioned around the head monitor the washout of Xe-133 from the brain. The rate of tissue washout is a measure of tissue perfusion, since the xenon has no way of leaving the tissue other than by blood flow. The greater the blood flow, the faster the washout. Information from the probe is analyzed by computer to give washout rates, which can then be translated into values of regional cerebral blood flow. (The same general approach can be used to measure blood flow in other organs as well.)

Physiologically, the technique works like this: The Xe-33 that is dissolved in the blood travels to the capillaries; since the concentration of Xe-133 is (initially) much higher in blood than in the tissues, the Xe-133 diffuses freely from blood to tissue, gradually building up tissue concentration (washin phase). Much of the Xe-33 is lost in expired air as xenon gas. To build up the issue Xe-133 level for subsequent washout analysis, the patient rebreathes through a closed system so that the Xe-133 is continuously returned to him. After a period of ebreathing, the patient then breathes through an xhaust system from which the exhaled Xe-133 does not eturn. The concentration of Xe-133 in the tissues begins o exceed that in the blood, and the Xe-133 in the tissues iffuses back into the blood, from which it reaches the ungs and is exhaled; the tissue concentration gradually eclines (washout phase). About 95% of the Xe-133 in he lungs is promptly exhaled, but about 5% is eabsorbed into the blood and must be taken into ccount in the analysis. During the washout phase Xe-33 reaches the lungs from all parts of the body, from which it is washed out at varying rates; thus Xe-133 from he body can be reabsorbed in the lungs and may eappear in the brain during the washout phase, a omplication that must be corrected for by math-matical techniques (deconvolution).

The measurement of cerebral blood flow using Xe-133 nd probe detectors has been applied to a wide variety f conditions in both clinical and research settings, ncluding stroke,[2,3] TIA's,[4] head trauma,[5,6] and Alz-eimer's disease.[7,8] It has also found significant ap-lication in psychological studies: focal and regional hanges in cerebral blood flow can be mapped out for a umber of psychological tasks. For example, not only oes moving the right foot during the study cause a easurable increase in rCBF in the motor strip cor-esponding to the right foot, but even thinking about oving the right foot (without actually moving it) gives se to focal changes in rCBF that can be detected and apped.[9] Focal changes in rCBF associated with reading, lking, listening to music or speech, etc. have also been apped[10,11] and form a very interesting area of application for this technique.

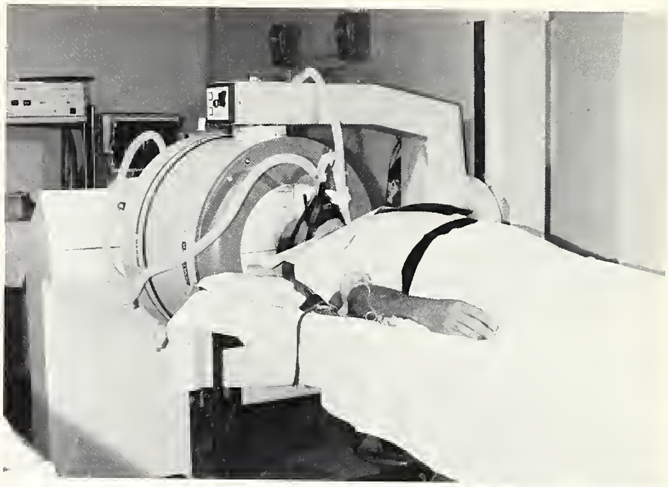

Figure 1
The patient is imaged with the gamma camera viewing the head in vertex projection. Lead aprons shield the camera from body activity. The face mask is connected to a closed-loop rebreathing system.

The instrumentation required for detecting the radiation emanating from the Xe-133 in the brain has varied from simple probes to multiprobe systems, specially designed gamma cameras, and specially designed tomographic imaging systems.[3] The most widely used system today is the multiprobe system of 8 to 16 detectors positioned about the head. This system costs on the order of $100,000, and is suitable only for this type of measurement. Some authors have reported satisfactory results using the ordinary gamma camera,[12-15] but difficulties in analysis of the washout curves obtained with this detector have severely limited its application to rCBF studies. The multiprobe system remains the "gold standard" against which other systems must be compared, but its expense and lack of versatility led us to wonder whether ordinary clinical decisions could be made using the data obtainable from conventional nuclear medicine equipment, taking advantage of newer computer technology to overcome some of the difficulties encountered with the gamma camera.

In 1980 we began an investigation at the University of Arizona Health Sciences Center to see whether satisfactory measurement of regional and global cerebral blood flow could be made using an ordinary gamma camera and computer. Patients with neurovascular problems in whom vascular surgery was contemplated or had been done were referred to the Division of Nuclear Medicine for evaluation of cerebral blood flow. A smaller number of patients were referred for other reasons, primarily for evaluation of blood flow in stroke and TIA. The investigation was approved by the University Human Subjects Committee and all patients and volunteer subjects gave informed consent.

Our technique is as follows: The patient is positioned supine with the gamma camera viewing the head in vertex projection (Figure 1). In this way the two hemispheres can be compared. (Other projections are used as clinically indicated.) Lead aprons are positioned about the shoulders so as to shield the camera from radiation originating elsewhere in the body. A rebreathing apparatus is set up, such as is used in ordinary nuclear medicine ventilation studies. Xe-133 (50 millicuries) dissolved in saline is injected intravenously, or alternatively can be inhaled as xenon gas. We prefer the intravenous route as it delivers all the Xe-133 to the lungs at one time, a distinct advantage in patients with obstructive pulmonary disease. When the Xe-133 arrives in the lungs, most of it enters the alveolar air and is exhaled into the rebreathing system. The patient rebreathes the Xe-133 through a closed system for one minute, to build up the tissue level of the radiotracer. Oxygen is added and carbon dioxide is removed continuously. After one minute the expired-air line is connected to an activated-charcoal xenon trap, and the patient inhales room air through the inlet valve of the face mask. The gamma camera is connected to a computer, which continuously records the level and location of Xe-133 in the head. We monitor head activity for a 1-minute washin phase and a 14-minute washout phase.

Regions of interest are drawn around each hemisphere and around the face mask, using the computer-generated images of the head. A typical series of images is shown in Figure 2, and a typical brain washout curve in Figure 3. Regions of interest can be drawn around smaller areas as desired. After smoothing, filtering, and deconvolution (using the face mask time-activity curve as the input function), the washout curves are fitted to a two-exponential model and values for cerebral blood flow are calculated. (Details of the analytic technique are available on request). Normal adult values for mean cerebral blood flow range from 35 to 45 ml/min/100 gm brain tissues, and vary inversely with age. The analysis is also capable of yielding blood flow estimates both in gray matter (fast flow) and in white matter (slow flow), as well as a weighted average of the two (mean flow). Figure 4 shows a functional image of regional cerebral blood flow.

We have used our current technique in 30 patients. The study was technically satisfactory in 25; in the remaining five, patient motion or equipment malfunction rendered the study unusable. Of the 25 technically successful studies, 24 gave information that was fully compatible with information obtained from other sources (clinical data, angiography, CT, other diagnostic tests) and provided valuable additional information in many cases.

Values of cerebral blood flow obtained with this technique agree well with published values based on the multiprobe system. In three cases we measured cerebral blood flow after injection of Xe-133 dissolved in saline directly into the internal carotid artery during angiography. This technique is "cleaner" in that the tracer is delivered directly to the brain only, and there is no contamination of the washout curves by scalp or body activity. The results agreed to within 5% of CBF values obtained on the same patients using intravenou inhalation and rebreathing.

Some case histories may illustrate the applications o this techniques to neurovascular problems:

Case 1: This 64-year-old right-handed white mal had a history of right hemispheric TIA's for several years Angiogram showed total occlusion of the right interna carotid artery and 30% stenosis of the left intracrania

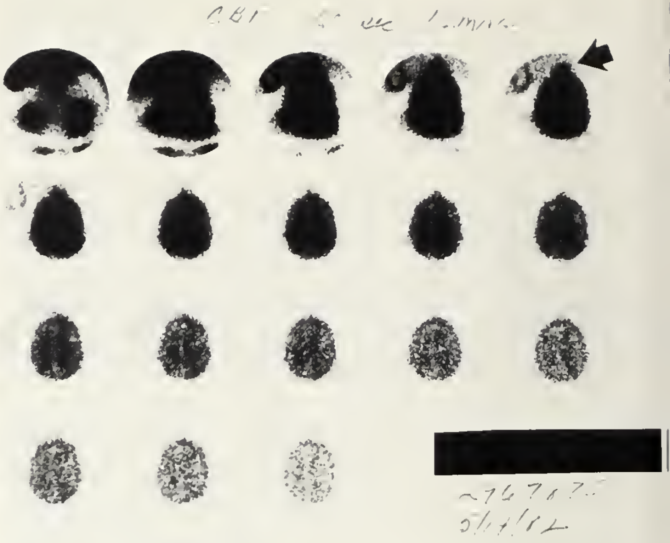
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Figure 2
A typical set of images of the head. Each image represents one minute. Note face mask activity (arrow) in images four to eight. Regions of interest are drawn around the hemispheres and the face mask in the computer-generated images.

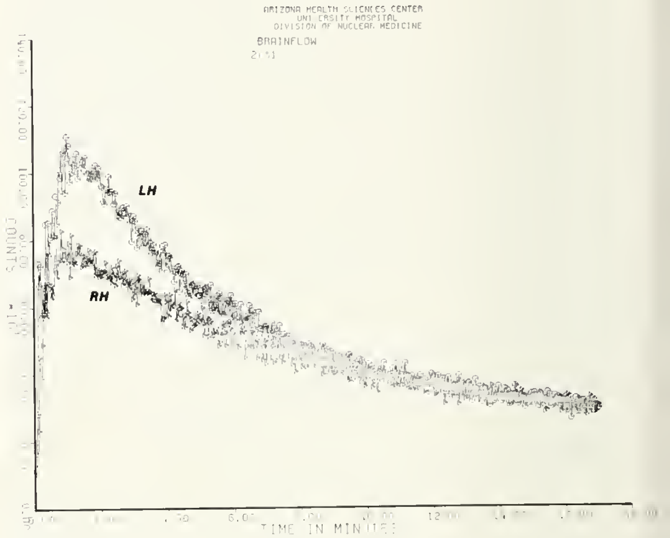

Figure 3
(Case 1, first study.) Activity in the two hemispheres as a function of time. During the first minute, activity builds up with rebreathing, then falls during washout. The right hemisphere shows a lower peak and a slower rate of washout than the left, reflecting the right hemispheric ischemia that eventuated in a stroke. See text.

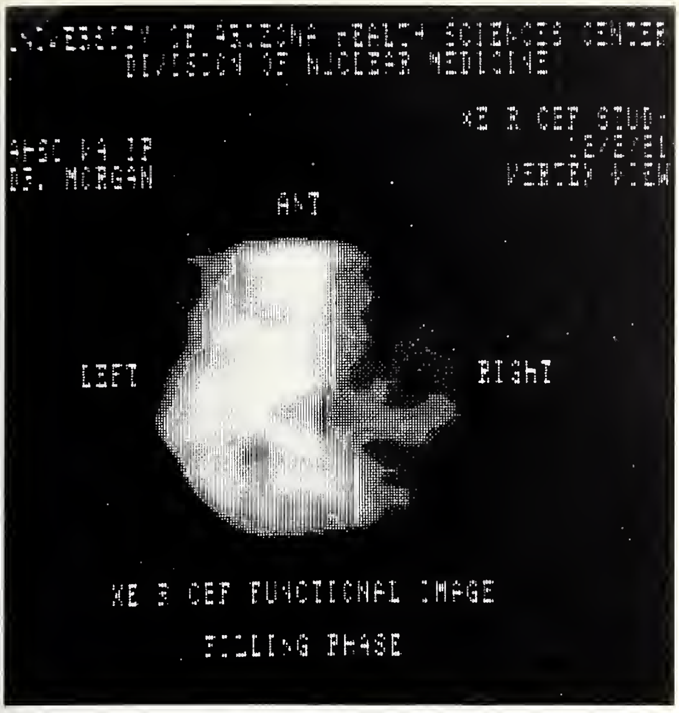

Figure 4
(Case 1, first study.) Functional image of regional cerebral blood flow; brighter areas have higher flow. There is a marked deficit in the right hemisphere, in the distribution of the right middle cerebral artery.

portion, with normal vertebral arteries. There was no crossover from left to right, and the right hemisphere showed delayed vascular contrast opacification. Xe-133 cerebral blood flow study showed delayed radioisotope arrival in the right hemisphere during the washin phase. Mean flow values were 37 ml/min/100 gm in the left hemisphere and 28 ml/min/100 gm in the right hemisphere. (The latter value is abnormally low for the patient's age.) Three weeks following the study the patient suffered a mild stroke involving the right hemisphere, with left hemiparesis and transient blindness. CT study showed a 5 cm area of decreased density in the right frontal lobe. When the patient's condition had improved, a right superficial temporal—middle cerebral artery bypass was performed. Following this, a repeat rCBF study showed prompt, symmetric arrival of Xe-133 in both hemispheres with mean flow values of 34 ml/min/100 gm in the left hemisphere and 36 ml/min/100 gm in the right hemisphere. The patient has continued to do well and except for some residual left hemiparesis has suffered no further ischemic episodes.

Case 2: This 74-year-old right-handed hypertensive white female had recurrent right hemispheric TIA's, with transient left hemiparesis. A digital subtraction angiogram showed a nonulcerated 80% stenosis of the right internal carotid artery, and 60% stenosis of the left; 30% stenosis of the right vertebral artery, and complete occlusion of the left. CT showed a tiny lacunar infarct in the anterior limb of the right internal capsule. Xe-133 cerebral blood flow study yielded mean flow values of 39 ml/min/100 gm in the left hemisphere, and 33 ml/min/100 gm in the right hemisphere. (Both values are essentially within the normal range for the patient's age.) Although the right hemisphere flow values were significantly lower than the left, they were considered to be acceptable for the patient's age and vascular surgery was deferred. The patient has continued to do well on medical therapy, with less frequent and severe TIA's.

Case 3: This 25-year-old right-handed white female suffered explosive onset of severe headaches followed by left hemiparesis, and had been shown by CT to have a subarachnoid hemorrhage secondary to an aneurysm of the right middle cerebral artery. A second aneurysm of the left internal carotid artery had caused no apparent symptoms. Digital subtraction angiogram showed both aneurysms, with spasm involving the right middle cerebral artery. Aneurysm ligation was deferred because of the spasm. Xe-133 cerebral blood flow study gave mean values of 52 ml/min/100 gm for the left hemisphere and 33 ml/min/100 gm for the right. The left hemisphere CBF value is in the high-normal range, and the low-normal value for the right hemisphere probably reflects hypoperfusion as a result of the arterial spasm. A repeat digital subtraction angiogram showed continued but diminished spasm on the right. In view of this, and the acceptable cerebral blood flow values, it was felt safe to explore the aneurysms and reinforce them in two operations, since they could not be safely clipped. The patient experienced a good recovery with only mild residual left hemiparesis, and no other abnormalities. On repeat CBF study the mean flow values were 57 ml/min/100 gm in the left hemisphere and 46 ml/min/100 gm in the right. The headaches subsided with time.

In our series of patients this simple, noninvasive study contributed valuable additional information for decisions on patient management, as illustrated in the case reports. Clearly, in making decisions regarding surgery, the cerebral blood flow study must be viewed in the perspective of all other available information.

There are other techniques available for the measurement of regional and global cerebral blood flow. The washout of stable xenon from the brain can be monitored using a CT scanner. Angiography, though it gives valuable information on anatomic structures and transit times, is not yet able to quantitate intravascular flow or tissue perfusion. Future developments in angiography may well make this possible, but the technique is moderately invasive, and requires the injection of iodinated contrast agents. It is possible that nuclear magnetic resonance (NMR) techniques can be adapted to monitoring the rate of washout of inert substances and thereby give data from which cerebral blood flow can be estimated. The role of NMR remains to be explored. New nuclear medicine techniques are currently under investigation

In summary, we have found the measurement of regional and global cerebral blood flow using the Xe-133 washout technique and ordinary nuclear medicine equipment to be a simple, rapid, noninvasive, and useful technique for assessing brain tissue perfusion. The study can be done in any nuclear medicine facility having a gamma camera and appropriate computer.

Limitations include the requirement for patient cooperation (breathing through a face mask for 15 minutes and remaining still during this time). The technique requires computer sophistication to initiate and interpret the studies. Finally, the gamma camera can image only one plane at a time, whereas the multiprobe system counts over the entire brain surface simultaneously after a single radioisotope injection. Regions of interest in the brain can be selected on the basis of clinical signs or angiographic or CT findings after the study is completed, and quantitative values for regional CBF can be computed. Air spaces or other sources of artifacts can be easily identified and deleted from flow computations.

The minute amount of xenon contained in the tracer dose has no measurable biologic effect on the body whatsoever (xenon in larger quantities has anesthetic properties). There is no preparation required, and no discomfort to the patient other than that of the intravenous injection (which is optional) and the bother of having to breathe through a face mask for 15 minutes. The Xe-133 cerebral blood flow study is easy to set up, requires a total time of about 30 minutes, and involves no drugs, catheters, or invasive procedures. Hospitalization is not required.

With the increasing numbers of the older population, and the greater number of patients suffering from cerebral vascular disorders, the measurement of cerebral blood flow promises to be a valuable addition to neurologic evaluation and diagnosis. The technique potentially has an impressive range of applications, and once its clinical role has been established it can be made available by many nuclear medicine facilities in community hospitals with little additional investment.

Acknowledgement:

We would like to acknowledge the support and assistance of Jerry Goldstone, M.D., Wesley S. Moore, M.D., Jose F. Laguna, M.D., James M. Malone, M.D., and Joachim F. Seeger, M.D.

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Obstetrics &
Gynecology

Nontetanus Clostridal Neonatal Fatality After Home Delivery

Ronald P. Spark, M.D.
David A. Wike, M.D.

Editors:
Daniel F. O'Keefee, M.D.
John Elliott, M.D.

Abstract

A four-day-old infant was brought in dead with *Colstridium sordellii* omphalitis, abdominal cellulitis and peritonitis. Of the thirteen cases of neonatal nontetanus Clostridial infection reported, there are at least eight fatalities. This is in contrast to the favorable outcomes described in anaerobic bacteremia in neonates. Nontetanus Clostridial infections in neonates nearly always present as an omphalitis which is usually due to inadequate stool removal and skin hygiene. Arizona's home birth rate is more than two times the national figure, but Yavapai County has ten times the United States average. This infant's course may have been influenced by fear of prosecution following home delivery by an unlicensed midwife.

Key Words: Clostridial infections, *Clostridium sordellii*, home-delivery, midwifery, neonatal death, neonatal infection.

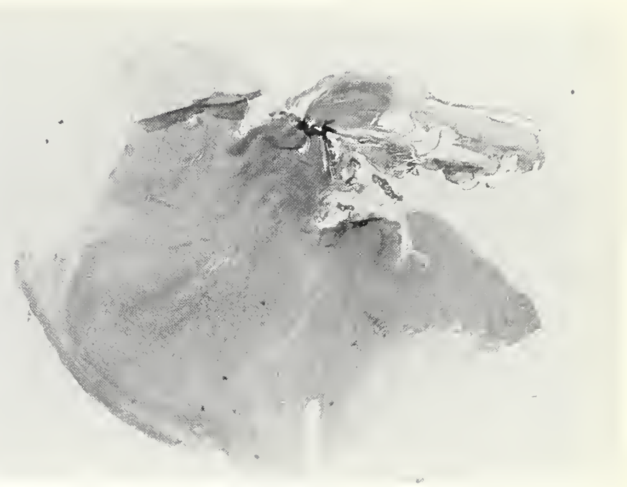

Figure 1
The mummified umbilical cord at its insertion demarcates the area of abdominal wall cellulitis and umbilical vessel thrombosis (hematoxylin-eosin, original magnification X 7.5)

Introduction

Although nontetanus Clostridial infection in the neonate is rare[10-11] there have been at least eight deaths among thirteen infants reported. This experience is in sharp contrast to the favorable outcomes noted in a series of 23 newborns with anaerobic bacteremia, resulting in only one death.[6] We report here a third instance of fatal neonatal *Clostridium sordellii* infection.[8,9] In adults, infection generally results from intestinal perforation;[12] in the neonate, omphalitis and septicemia are the usual presentations.

This child was home delivered and attended by an unlicensed midwife. The lack of standard postnatal hygiene may have contributed to this infant's death.

Case Report

A four-day-old term infant, born at home, was discovered dead in her mother's bed. In the preceding 48 hours, the infant cried out during feeding and when "burped." On the evening before death she refused to eat.

The postmorten abdominal skin was mottled, cyanotic and bore a dried 3 cm. umbilical stump, tied at the end by a string. The protuberant abdomen consisted of an indurated, thickened 1 cm wall; a large amount of thin, nonfoul smelling, yellow ascitic fluid; and congested viscera. The peritoneal surfaces were dull and congested. An occasional petechia was noted in the thymus, kidney, and cerebellum. Marked edema and acute inflammatory infiltrates were associated with myriads of gram positive bacilli in sections of the umbilicus (Figure 1), abdominal wall (Figure 2) and paraurachal peritoneum (Figure 3). Acute congestion of the viscera, mild pulmonary edema and early lympholysis of the thymus and lymph nodes were also noted. The peritoneal fluid yielded a pure culture of an anaerobic organism which was large, straight, thick and a gram positive bacillus. A light innoculum gave indeterminate reactions with the

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From: The Laboratory, Tucson Medical Center and Department of Pathology, University of Arizona, Tucson, Dr. Spark; and the Laboratory, Yavapai Community Hospital, Prescott, Dr. Wike. Reprint requests to Ronald P. Spark, The Laboratory, Tucson Medical Center, Box 42195, Tucson, Arizona 85733. Presented in part at the American Society of Clinical Pathologists semiannual meeting, St. Louis, Missouri, October 19, 1983.

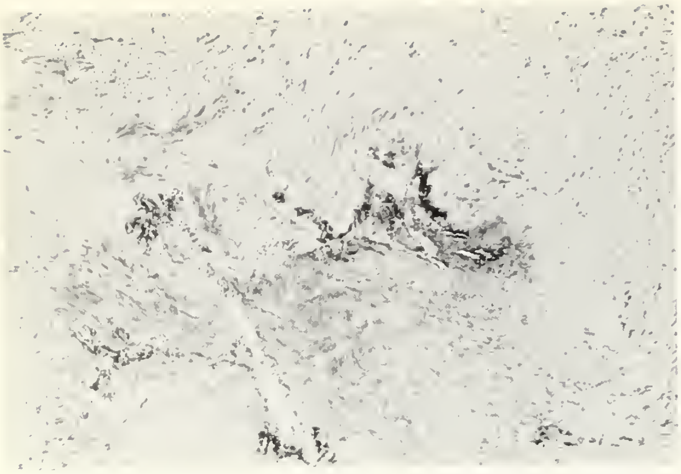

Figure 2
Within the abdominal cellulitis, a collapsed umbilical vessel is permeated by pockets of organisms (Brown-Brenn-Gram, original magnification X 10).

API 20 A* strip. Use of a heavier innoculum identified the organism as *Clostridium sordellii.* This was confirmed by the Arizona Department of Health Services. Antibiotic sensitivity testing was not performed.

Discussion

Neonatal death attributed to infection has become increasingly rare in Arizona, 6.7 per 100,000 live births (1979-80) versus 11.36 per 100,000 (1973-74).[13] While obviously this is due to many dynamic factors, at least one of these is a 1977 midwife licensure law. To avoid prosecution under this statute and still attend the delivery, the unlicensed midwife prearranges a family member's statement of attendance, and this appears in the birth registration. While Arizona's out-of-hospital birth rate, 1.79% in 1981[13] is substantially higher than the U. S. average, 0.97% in 1979,[14] Yavapai, the county of this birth, has the greatest rate of all Arizona's counties, 13.4% in 1982.[13] This figure becomes even more striking when contrasted to the combined out-born rate for all of Arizona's rural counties, including Yavapai, 2.4% in 1979.[13] While the 13.4% includes both licensed attended and unlicensed attended deliveries;[16] the figure also includes a number of deliveries of Yavapai residents outside of the county (principally in Maricopa and Coconino hospitals). Even if the figure is inflated, it reflects a growth in those who choose an out-of-hospital delivery. In the years 1979, 1980, and 1981 the Yavapai rates were 5.0%, 9.6% and 12.4%.[13] We do not have any Arizona factoral analysis but a 1974-76 North Carolina survey found 57% of home deliveries were "intended," 26% were for economic, 8% were for religious and 9% were for other or unknown reasons.[17]

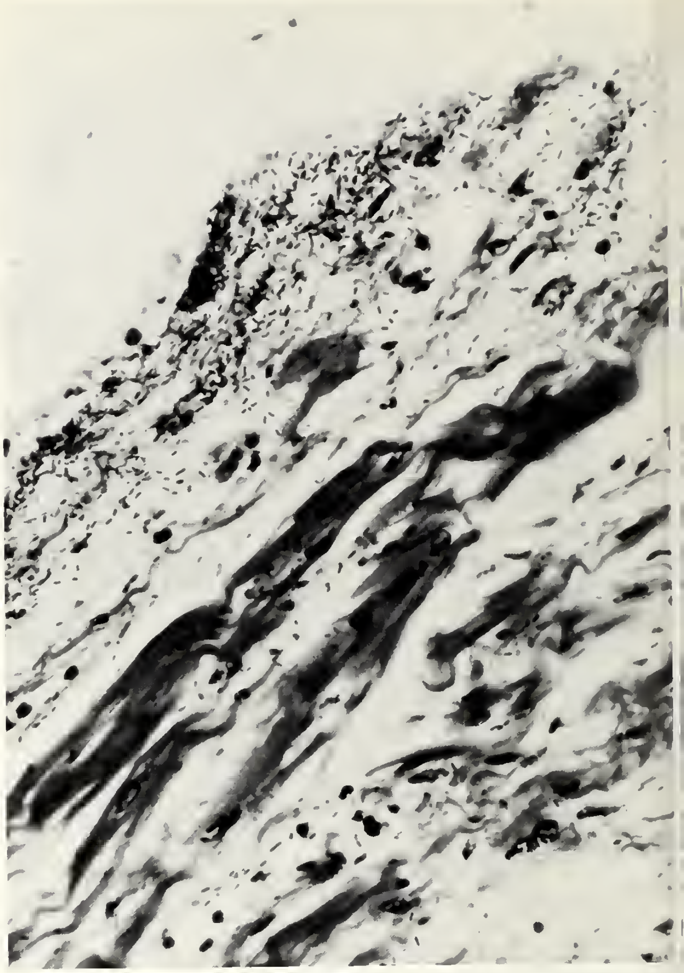

Figure 3
Infiltrating the paraurachal peritoneal surface are myriads of gram-positive bacilli (Brown-Brenn-Gram, original magnification X 400)

The thirteen neonatal cases of reported nontetanus Clostridial infections are listed in the Table. In addition, there are eighteen neonatal isolates among a series of 86 patients with nonhistotoxic Clostridial bacteremia reported without any clinical details.[18] The paucity of neonatal cases is surprising as Clostridial species are a normal part of both vaginal and stool flora.[19] Finegold, in his review,[19] cites work identifying *Cl perfringens, Cl paraputrificans, Cl difficile* and *Cl tertium* in the stool of newborns. Furthermore, Bernstine was able to culture Clostridial and other anaerobes in approximately 20% of umbilical cords sampled at 24 hours.[20] Another possible source for umbilical innoculation is the soil. It is interesting that Smith notes "a tendency for *Cl sordellii* infections to occur in more arid climates,"[12] such as Arizona.

Only three of the thirteen infants listed in the Table are known to have recovered (two outcomes are unreported). This is in contrast to series by Chow et al. in which there was only one neonatal death in 23 cases.[6]

Another unexpected finding of our review was that all three babies with *Cl sordellii* infection died. This well may be by chance, as *Cl sordellii* is biologically similar to the other nontetanus Clostridia causing neonatal infections. As a group the mortality is high. Although the mechanism of death in *Cl sordellii* infections is not clear, it is possibly attributable to a beta toxin.[12] This toxin is a phosphokinase A which produces edema, particularly in fat. The brawny, thickened postmortem abdominal wall

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**Analytab Products, Plainview, New York 11803*

Table
Nontetanus Clostridial Infections in Neonates

Author	Age	Infections	Organism	Outcome	Comment
1. Isenberg, 1966[1]	Newborn	Omphalitis	*Cl perfringens*	Recovered	
2. Isenberg, 1966[1]	Newborn	Septicemia	*Cl perfringens*	Died	Postexchange transfusion
3. Prevot, 1966[2]	Newborn	Omphalitis	*Cl tertium*	?	
4. Freedman & Hollander, 1967[3]	2 days	Sigmoid colitis Septicemia	*Cl perfringens*	Died	Postpartial resection neuroblastoma; neomycin and penicillin
5. Wilson, et al., 1972[4]	2 weeks	Omphalitis	*Cl paraputrificans*	Died	
6. Walker & Macaraeg, 1973[5]	2 weeks	Omphalitis Septicemia	*Cl perfringens*	Died	Penicillin and gentamycin
7. Chow, et al., 1974[6]	Newborn	Septicemia	*Cl perfringens*	Recovered	
8. Gorbach & Thadepalli, 1975[7]	Newborn	Septicemia	*Cl septicum*	?	
9. Bodgan & Rapkin, 1976[8]	13 days	Omphalitis, Abdominal wall cellulitis Septicemia	*Cl sordellii*	Died	Ampicillin, kanamycin, tetanus antitoxin
10. Gormley, 1977[9]	4 days	Omphalitis Abdominal wall cellulitis	*Cl sordellii*	Died	Surgical excision of cellulitis
11. Chaney, 1980[10]	12 hours	Omphalitis Septicemia	*Cl perfringens*	Recovered	Ampicillin and kanamycin penicillin
2. Mitchel, Etches & Day, 1981[11]	4 days	Septicemia	*Cl butyricum*	Died	"Antibiotics"
3. Present Case	3 days	Omphalitis Abdominal wall cellulitis, Peritonitis	*Cl sordellii*	Died	

of this infant was impressive, especially in the area of the umbilical cord insertion. Microscopically, there were myriads of gram positive bacilli in the cord, abdominal wall and along the contiguous peritoneal surface. The pathogenic sequence of infection requires not only initial tissue innoculation but also an impaired blood supply, such as is present in the necrosis of the postpartum umbilical cord stump.

Intial identification of the Clostridial species was delayed because a light innoculum was used for the API 20A* biochemical strip. A heavier innoculum gave the definitive reactions, which were confirmed by the Arizona Department of Health Services. Formerly, Clostridial species were uniformly sensitive to penicilin, but resistance has emerged.[21] Unfortunately, despite antibiotic treatment death occurred in three of four reported instances (see Table). A fifth infant died after surgical debridement was attempted.

Modern hygienic practices of newborn care have made such infections rare. What pejorative factors the out-of-hospital delivery by an unlicensed midwife played in this infant's death is uncertain. However, fecal soilage probably occurred and there was sufficient contact time with the necrotic umbilical stump to permit nfection. Tragically, the infant's symptoms were present for at least 48 hours before death, but no medical attention was sought. While it is unclear at what point treatment would have effected survival, at least three of the thirteen collected cases recovered. This high mortality rate emphasizes the urgency of early recognition, antibiotic therapy, and, if appropriate, surgical intervention.

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Pediatrics

Methemoglobinemia In An Infant

William J. Maloney, M.D.
Michael T. MacFarlane, M.D.
Mary E. Rimsza, M.D.

Editor:
Steve Shapiro, M.D.

Abstract

A case of secondary methemoglobinemia is presented in a formula fed infant with diarrhea and acidosis. Ingested water nitrate levels met publicly accepted standards. Infants less than two months of age are predisposed to the development of methemoglobinemia by virtue of their HbF, immature reductase systems, increased gastric pH and small total hemoglobin content. It appears that this combination of diarrheal disease complicated by acidosis with even low levels of drinking water nitrates, can lead to secondary methe-moglobinemia in infants.

Key Words: Methemoglobinemia, Nitrates, Nitrites, Methemoglobin, NADH, NADPH Oxidoredustases.

Introduction

Infantile methemoglobinemia is considered to be a rare clinical disorder. Recent reports, however, suggest that it may be more common than previously recognized. Yano and Danish recently reported eleven cases of methemoglobinemia from two centers that they had seen in a one year period.[1] In addition, letters to the editor in response to their article reported another 79 cases.[2-4] In 1945, Comly described the first case of infantile methemoglobinemia attributed to high nitrate levels in well water.[5] Following this report and epidemiologic studies by Walton, the Environmental Protection Agency set limits on the amount of nitrates allowed in drinking water at 45 mg/L (ppm).[6] Recently there has been pressure to relax standards in areas exposed to increasing nitrate pollution of ground water in which overt cases of infantile methemoglobinemia are rarely reported.[7] A recent paper sponsored by the city of Glendale, Arizona concluded that nitrate levels are set too low.[8] We report a case of methemoglobinemia in an infant with diarrhea and acidosis. The public health aspects of nitrate contaminated drinking water especially for infants with diarrheal disease will be discussed.

Case Report

D. L., a four-week-old Mexican-American male, was referred to the Maricopa Medical Center for suspected sepsis. The baby was a 3100 gram product of normal pregnancy, labor, and delivery. The infant was in good health until approximately 48 hours prior to admission when he became irritable and refused to eat. He subsequently developed vomiting, diarrhea and a tactile fever. The mother also noted dark urine.

Since birth, the infant had been fed only a soy-based formula concentrate appropriately diluted with water from a neighbor's home. No other foods, liquids, medications or vitamins had been given to the infant. The mother did not boil the formula or water and would mix each bottle immediately before a feeding. An unfinished bottle was left unrefrigerated for a maximum of three hours.

Physical examination on admission revealed a lethargic baby. His weight was 2.9 kg (< 5th percentile), length was 44 cm (< 5th percentile) and head circumference was 38.5 (75th percentile). Vital signs were rectal temperature 36.5°, pulse 145/minute, respiratory rate 48/minute and blood pressure 93 mmHg/66 mmHg. The skin was cool and grey with peripheral cyanosis and decreased turgor. The remainder of the physical exam was normal.

Admission labs were as follows: Hct 38%, Na 134 meg/L, K 5. lmeg/L, Cl 114 meq/L, HCO_3 9 meq/L, Cr 1.3 mg%, BUN 13 mg%, Ca 10.4 mg%, and Glucose 112 mg%.

From: Department of Pediatrics, University of Arizona College of Medicine and Department of Pediatrics, Maricopa Medical Center, Phoenix, Arizona 85008. Reprint requests to Mary Rimsza, M.D., Maricopa Medical Center, 2601 East Roosevelt, Phoenix, Arizona 85008.

Urinalysis showed a specific gravity of 1.010, pH 5.0, negative for protein, glucose and blood. The calculated anion gap was 11.

The infant was placed on 50% oxygen. A capillary blood gas revealed a pH of 7.16, pCO_2 of 14 mmHg and a bicarbonate of 5 mgq/L. Bicarbonate was given and rehydration begun. A subsequent arterial blood gas on 100% oxygen via hood showed a pH of 7.43, pO_2 of 468 mmHg, ^{pCO}2 13 mmHg and a bicarbonate of 8 meq/L. Despite a high arterial ^{PO}2, the patient's blood was noted to be dark. A methemoglobin level drawn eight hours after admission was 27.6% (normal 0-2%). One mg/kg of methylene blue was given intravenously twice. The cyanosis and respiratory distress improved after methylene blue administration.

Hemoglobin electrophoresis revealed 29% HbA and 71% HbF. A repeat methemoglobin level approximately 24 hours after methylene blue was 2.1%. A third methemoglobin level one week after admission was 1.7%.

Ampicillin and gentamicin was administered for 24 hours. Blood, urine and CSF cultures were negative. Stool cultures grew salmonella enteritidis (group C1).

The tap water from the child's home and neighbor's home were assayed for nitrates. The levels were found to be 28.6 mg/L from the child's home and 15.1 mg/L from the neighbor's home. Bacterial cultures from both water supplies were negative for coliform species.

Discussion

The iron molecule in hemoglobin is normally in the ferrous Fe^{2}+ state. During normal red cell metabolism, endogenous oxidants will oxidize small amounts of the heme iron to the nonfunctional ferric state which is methemoglobin. The red cell has two specific enzyme systems which reduce methemoglobin to hemoglobin.

The primary mechanism of methemoglobin reduction is the NADH-dependent methemoglobin reductase or diaphorase I enzymatic reaction which accounts for 95% of the red blood cells reducing activity. The second reducing system is the NADPH-dependent methemoglobin reductase or diaphorase II which normally accounts for only 5% of the available reducing activity. The activity of the diaphorase II system, however, can be increased by the addition of methylene blue as a cofactor. Together these two enzyme systems are normally able to keep the level of methemoglobin less than two percent of the total hemoglobin concentration. Under certain conditions, these enzyme systems can be overwhelmed by abnormally high rates of methemoglobin production resulting in methemoglobin levels greater than two percent (methemoglobinemia).

Methemoglobinemia can be divided into two major categories—hereditary and acquired. Hereditary methemoglobinemia is usually due to a deficiency of diaphorase I or to an abnormal hemoglobin M. Homozygous diaphorase I deficiency usually results in little if any active enzyme with methemoglobin concentration of 10% to 15%. Heterozygous diaphorase I deficient individuals have little if any abnormality with near normal methemoglobin concentrations of 1% to 2%. However, they do carry an increased susceptibility to methemoglobinemia when exposed to an oxidant stress. Hemoglobin M is an abnormal hemoglobin molecule because of an amino acid substitution which causes the heme iron to remain in the ferric state. No amount of reducing power can alter this, therefore, only the heterozygous state is compatible with life. A hereditary deficiency of diaphorase II does exist. However, due to its small contribution to physiologic reducing activity it is not clinically important unless an additional hereditary or acquired factor also occurs.

Acquired methemoglobinemia, due to excessive oxidant stress, is responsible for most clinical cases. Many possible exogenous sources of oxidizing agents have been reported in the literature, but well water nitrates is the most frequently cited oxidant stress.[9]

Other oxidizing agents include aniline, phenacetin, acetanilid, sulfonamides, nitrobenzene and silver nitrate. High levels of nitrate in drinking water occurs most commonly in agricultural areas, where nitrate containing fertilizers contaminate the public water supply.

There are four factors which predispose the infant to methemoglobinemia. First, gastric pH in infants is higher in the first one to two months of life which facilitates bacterial contamination of the upper gastrointestinal tract. This excessive bacterial colonization increases the conversion of nitrates in the diet to nitrites. Second, the NADH-dependent methemoglobin reductase activity in newborns is approximately 60% of adult activity[1] and when diarrheal disease severe enough to produce acidosis occurs the enzyme activity is decreased even further.[10] Third, fetal hemoglobin, which is approximately 70% of total hemoglobin at birth, has an increased susceptibility to oxidation. Fourth, total circulating hemoglobin decreases between the first and second month of life making a smaller absolute amount of methemoglobin of greater clinical significance. (Figure 1)

In our case we have a toxic infant presenting with at least a 24 hour history of diarrheal disease. The infant's urine was noted to be dark, which may have been due to the presence of methemoglobin in the urine. The infant was tachycardiac, tachypneic and had peripheral cyanosis. Despite a good capillary PO_2 on 100% oxygen, the patient's blood was dark in color suggesting the "chocolate" brown color of methemoglobinemia. A serum methemoglobin level was 27.6%. Home water nitrate levels were within the Public Health Department standards. Besides the water supply there was no other source of exogenous nitrates or oxidizing agents. Hemoglobin electrophoresis revealed no abnormal HbM and the patient responded rapidly to methylene blue therapy, ruling out an hereditary diaphorase enzyme deficiency with the possible exception of a heterozygous diaphorase I defect. Positive stool cultures for Salmonella were obtained and may have played an important role in the development of methemoglobinemia in this patient.

Until recently, most cases of infantile methemoglobinemia were thought to be due to high nitrate levels in drinking water. Hegesh, however, has shown that hospitalized infants with diarrhea on low nitrate diets, excreted up to ten times more nitrate than they ingested and occasionally developed elevated methemoglobin levels.[11] He postulates that nitrates and/or nitrites are synthesized de novo by bacteria in the gastrointestinal tract from other nitrogen compounds and that this may lead to the development of methemoglobinemia.

Yano and Hsai have reported preliminary results demonstrating that diarrhea and acidosis could produce methemoglobinemia without a significant demonstratable exogenous nitrate source.[10] They hypothesize that diarrhea produces an oxidant stress that increases methemoglobin production and that acidosis impairs methemoglobin reductase systems. Whether this oxidant stress is the de novo synthesis of nitrates postulated by Hegesh or some as yet unidentified factor is not clear.

The Water Quality Control Bureau is responsible for monitoring the quality of water in the state of Arizona. This bureau depends on each water system to send in a sample of distributed water every three years. The data accumulated from these samples may be difficult to interpret. Each system may be comprised of several interconnecting wells and the nitrate level of the distributed water at any given point is dependent upon the pumping rates of various interconnecting wells and overall demand. The range and mean value of the nitrate levels of specimens received in the past three years from the Avondale City Public Works are reported, because this is the water system involved in our case report:

Range: 0.86-12.40 mg/L Nitrate Nitrogen (3.87-55.8 mg/L Nitrates)

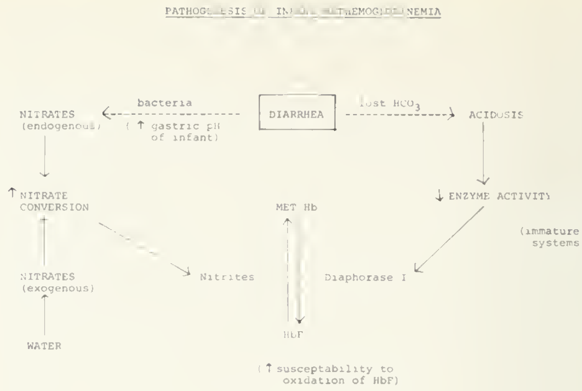
Mean: 6.40 mg/L Nitrate Nitrogen (27.8 mg/L Nitrates)

It should be noted that boiling of the water to make infant formula may lead to higher concentrations of nitrates. Due to the problem in interpreting Water Quality Control Bureau data, water supplies in question should be tested individually.

Based on the available data we would suggest that the high risk group of infants less than two months of age who develop diarrheal disease be fed only purified drinking water or a "ready to feed" commercially available formula. Prophylactic ascorbic acid (Vitamin C) may help enhance the nonenzymatic reduction in these infants. Finally, any infant presenting with severe diarrhea, especially those with a hyperchloremic metabolic acidosis should be evaluated for methemoglobinemia.

Summary

Infants are predisposed to the development of methemoglobinemia by virtue of their HbF, immature reductase systems, increased gastric pH and small total hemoglobin content. (Diarrheal disease leads to elevated methemoglobin levels by increasing bacterial nitrate conversion and possibly by de novo bacteria production of nitrates.) An additional complicating nonanion gap hyperchloremic metabolic acidosis may further impair methemoglobin reductase activity Formula fed infants may be at increased risk for methemoglobinemia even when drinking water nitrate levels are within Public Health Department standards (Figure).


PATHOGENESIS OF INFANTILE METHEMOGLOBINEMIA

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varice, Ennui nd Onanism

illiam B. McGrath, M.D.

ditor:
homas E. Bittker, M.D.

Medical philosophy, an uncharted continent, is partly ithin the province of psychiatry. Philosophy is hard to ink about, hard even to define. We are referring to all at can be appreciated by intuition and reasoning, ther than through revelation as in religion or by way of irect observation as in science.

We also have in mind one's natural wish for some kind f personal philosophy, some intelligent ranking of alues and goals. Such would be like the theme of a mphony or any artistic composition, unifying and nally harmonizing the parts and their relationships. ong ago we defined soul as the purpose toward which e parts are organized. Anything or anyone who has no urpose has no soul.)

The ancients could at least strive for a transcendental nthesis of knowledge, for the sciences were still rounded in human perception and did not have struments of measurement or the soaring techno-gies which now extend our senses.

In the middle ages the alchemist dreamed of finding e Philosopher's Stone, a magical substance which ould transmute baser metals into gold. How seren-pitous that name, Philosopher's Stone, and how very ophetic! For gold was about to assume a whole new portance as a measure—*the* measure—of worth and wer.

Heretofore any nobleman, however impecunious, had enjoyed privileges which were forever beyond the reach of the entrepreneur. Hereditary titles and arbitrary grants carried far more weight than did any conceivable combination of talent and ambition or personal merit.

Relieved of the exhausting burden of making a living, the nobleman was free to dedicate himself to intellectual or artistic pursuits. Or he could derive vicarious gratification by patronizing someone more gifted than himself. Only in earlier ages could a Beethoven or a Michelangelo plan and work on a grand scale. Those cultures afforded the genius vast canvasses of time, such as we have never even dreamed about.

The evolution of democracy has changed all that. Power and its perquistities have passed from birthright to bank balance. The inevitable outgrowth of capitalism is actually Plutocracy, government by rich men.

Titles (entitlements) can be bought; have to be in fact. To become a judge or mayor, a senator or ambassador, nowadays entails the expenditure of prodigious sums of money. What a quaint hypocrisy, to address as "Your Honor" or "The Honorable," someone who has in effect purchased his office or position.

Transmute base metals into gold? Ha! A hypomanic boxer takes a fake Muhammadan name and dances the rope-a-dope and is paid more per hour than any fifty dedicated scientists or engineers. Elvis Presley and the Beatles are venerated (as in venereal?) and the highest paid individuals in the world are ill-begotten rock musicians or pig-eyed country singers with untrimmed whiskers as wiry as pubic hair. It takes a lot of money to join a country club and mix with those flat-bottomed women with their leathery voices and the red-faced golfers in their alpaca sweaters. Sorry! The supreme importance of money is still somewhat new to our thinking and not yet acceptable.

Money does ordain one's way of life. Lord Byron wrote, "Ready cash is Aladdin's lamp." Income decrees what one will eat and where and with whom; where and with whom one will socialize or travel or go to school or work or play. The patrolman who stops me is much more courteous when I am driving the Cadillac. One might take or be given credit for a lifetime of industriousness and self-denial, but that kind of credit is of little use when it comes to paying a bill or buying a ticket to a movie.

Wealth need not exclude but does shoulder any other consideration into second place. Altruism and philanthropy become indulgences of the very rich, mostly for tax purposes, and lose their moral value. Scholarship and aesthetics become luxuries and again can be purchased secondhand or leased.

For the main speech at the banquet the executive or politician will have paid an expert to introduce humor or style of which he is not capable. The mistress of an affluent household commissioned an interior decorator, yet graciously accepted the compliments of her guests.

If a person is shown deference only because he is rich,

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om: 4910 North 44th Street, Phoenix, Arizona 85018.

then getting rich becomes almost an end in itself. But the deference is still partly pretense: "Yes, sir," in exchange for a tip. When we have to pay cash for the world's favors, then the world has turned into a brothel, a house of ill repute. For a boughten favor, as from a prostitute, is not a favor at all. Any release of tension, any gratification is short-lived and incomplete.

The result is ennui, a sense of weariness and dissatisfaction. Walter Pater ("Marius, the Epicurean") described the aim of a true philosophy as "the maintenance of a kind of candid discontent, in the face of the highest achievement."

Among the causes of illness and untimely death, boredom ranks second only to uncertainty of one's welcome in the world. The malignant role of boredom can readily be recognized in careless driving habits, in obesity, in tobacco and alcohol addictions and in every other kind of self-abuse. Boredom is a provocative source of violence in prisons and in slums. It underlies an untold number of suicides. It is the main aggravation in many a divorce.

Chronic dissatisfaction and inability to relax have long been detected in the "Chicago Seven," the psychosomatic disorders identified by Franz Alexander and his group (circa 1965): essential hypertension, bronchial asthma, neurodermatitis, peptic ulcer, ulcerative colitis, rheumatoid arthritis and thyrotoxicosis.

In boredom there is usually an element of pace-the-floor restlessness. The bored person wants to have or do something, but whatever that might be, it is forbidden. If his problem is conscious—the individual knows what he wants—then his frustration may be due to the ordinary hobbles of reality: he cannot afford the financial or social risk; he is entrapped by duty or restrained by a more or less judicious cowardice. If on the other hand the individual cannot face or acknowledge what it is he is wanting, then his shackles constitute the age-old mechanisms of neurosis: denial, condensation and displacement, sublimation, and so forth. One thinks of primitive taboos and the graven images of psychoanalysis: incest, homosexuality, thanatos, the death wish.

In either event the bored person cannot compromise, cannot resign himself or be satisfied with substitute or ersatz gratification. A vice, such as alcoholism or gluttony or any of the sexual deviations, is not just a bad habit. A tunnel-like preoccupation is more diagnostic than the indulgence itself. Too much of the time the act or object is on one's mind. (There is intuitive wisdom in the fact that most commandments are couched in negative terms: "Thou shalt not . . ." Virtue may not be its own reward. But there are worldly and quite substantial benefits to the avoidance of vice.)

What the bored person is wanting and cannot get his mind off is not necessarily bad. On the contrary, he may be forbidden to have or pursue excellence. This is a crushing metaphysical fact. One is just as fearful of success as of failure, and one bitterly resents having to settle for mediocrity and the commonplace.

For thousands of years religion has conspired wit royalty to keep the peasant in his place. Prid covetousness, lust, gluttony, anger, envy and sloth- these were the pleasures and the perquisites of th palace; but they were the seven deadly sins of the ser because the authorities would chop off his hand or hea if he got too uppity. Dating back to the Garden of Ede and original sin, we have been in exile since the day w were born. Many of us were taught that poverty, chasti and obedience were the highest ideals. We wer drenched in unworthiness and shame.

We then went wrong when we tried to lift our sogg spirits in solitude. We took terribly mistaken pride i being private persons and not joiners. Movies and th other media have unfortunately romanticized an reinforced the heroic role of the loner.

We complained that others misjudged our shyness snobbery, but they may have been partly right. Som times ignored when they chose up sides for the softba game or volleyball, we rationalized (sour grapes) that w respected dignity and reserve and couldn't unbend t jostling and familiarity.

So we read and listened to music and meditated. W worked in our tiny gardens and communed with natu and with art. We bought telescopes and new lenses fo our cameras and looked at catalogues and added to ou stamp and coin collections. We handloaded ammu nition and shopped for gadgets for our neat litt workshops. We sat by ourselves watching the electron board at the stock exchange or the travelogue or th adult movie. We drank from the bottle of lonelines And the bootstraps broke.

A sick analogy comes to mind: one person putting coin in the mouth of a slot machine and another taking tranquilizer or antidepressant pill. Observe the aut erotic expression of the roller-skater with the earphon radio or the obscene body language of the lad at th Atari game. Our sin is onanism!

Genesis 38:9 "And Onan knew that the seed shou not be his; and it came to pass, when he went in unto h brother's wife, that he spilled it in the ground."

Or one is reminded of the rogue, the solitary ar vicious animal which has separated itself from the her A common example is the maladjusted individual wh has lost his license to practice law or medicine: h proves almost invariably to have been a loner.

Ennui is solitary. It is a negative force, a kind vacuum, and hence more collapsing or demolishing self-destructive than any stress of external or enviro mental conditions. In the latter, as in wartime or in cas of natural disasters, the individual is propped agair demoralization. He has something beside himself blame and he can hope for relief when the situati changes. Most important of all, he has the fellowship shared experiences.

Participate: to take part in something; to join or sha with others. Must it take a lifetime to learn that th opposite of ennui, the remedy, is participation?

Successful leaders, especially demagogues, have a vays relied on slogans and uniforms and chanting and narching; witness the rousing methods of a Mussolini or Hitler. Churches have especially realized the importance of fellowship and have fostered it with candenced rayers and hymns and social gatherings. Alcoholics nonymous, borrowing the wisdom, has proven more opular and effective than any learned psychotherapy.

To share any burden is obviously to lessen or lighten it, hether it be the weariness or working conditions or the nisery of military service, or whether it be the dread of neliness and the heartache of regret. You and a friend re a hundred times more likely than you alone to look r enjoyment or adventure and to be a good sport and nafraid. It is simply stupid to advise a person to get a obby. The man who says plaintively that his life seems lack purpose is probably just wanting to escape from rivacy, wanting an opportunity to participate.

The healthiest people, mentally and physically, are ose who belong to churches and political organitions and clubs, and who go to meetings. The ealthiest people are those who play cards or drink beer neighborhood pubs or go square dancing or join in e joshing cameraderie of a foursome at golf.

One can never know and validate one's self in a cuum or a mirror. One cannot live without acceptance others. Only in fellowship can one find permission d encouragement to function and to enjoy life and en to excel.

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Editorials

Peer Review: Does It Make A Difference?

The rapidly expanding cost of health care has resulted in attempts to monitor utilization and quality. Initially this was funded through the federal government's Medicare statutes in the form of regional peer review organizations established to monitor the Medicare program and Medicaid program. Subsequently other insurance carriers have felt that such utilization review activities are beneficial in helping to minimize health care expenditures. In this regard, several private review organizations have sprung up across the country bidding for these activities. Furthermore, most of these groups are nonphysician in nature and are doing these activities purely for a profit motive. With the introduction later this fall of diagnosis related groups (DRG's) for the Medicare program and subsequently their utilization in all probability by private health care carriers, i.e., the Blues, etc. additional utilization review and quality assurance will become more necessary.

Most physicians in practice respond negatively to these activities. They feel that this is another intrusion into the physician-patient relationship. Placing a limitation on the number of days the patient may stay in the hospital or questioning the necessity for an admission are added burdens which physicians feel places them in an untenable position when trying to medically care for a patient. Thus, physicians have not looked favorably on any intrusion between their patient and themselves. It is no small wonder that for the northern region of our state only approximately 30% of physicians belong to the regional PSRO (NAMES). A slightly larger figure, perhaps 40%, exists in the Southern Arizona region. Considering that there is no cost for joining these organizations, the low percentages are striking. However, my recent involvement in a local PSRO has prompted a reassessment of physician involvement and forms the basis of this editorial.

The control of quality and ultimately quantity is becoming an ever-increasing facet of all health care. "Payors" want to know what their dollars are buying. It is no different from us checking out our auto repair bills. We want to be sure we are billed appropriately, and not for things which needn't have been performed.

Computerization has enabled a great deal of data to be accumulated which is easily retrieved and thus can be perused by anyone with the time and proper inclination. Furthermore, the numbers generated can be quite misleading if not put in a clinical context. Observing the process of retrieving, analyzing and acting on this information as a peer review officer leads me to believe that we need continued physician involvement in such organizations in order to make certain that the information is properly handled. For instance, when looking at some "raw data" regarding the complication rate of three cardiovascular surgeons for the same operative procedure, one surgeon had a rate which was almost three times greater than the other two. At first blush one could have over-reacted to this information, but upon careful questioning by physician committee members and review of charts, it became apparent that his complication rate did not differ significantly from the other cardiovascular surgeons. Thus, the presence of physicians on review committees helped to clarify the reasons for this skewed computer data and helped prevent needless incursion into his practice. On the other hand, physicians have helped draft guildlines which have included excessive utilization and have had an important impact on cost savings by eliminating such activities.

With the advent of diagnosis related groups (DRG's) this October 1, mandated peer review is here. Because there appears to be a significant amount of money to be made in this area, several for profit corporations, with minimal physician members, have been formed, to bid for this business. I think the medical community would be best served if an organization which had significant physician input received the designation as the statewide peer review organization. The present PSRO's in our state will be phased out and one PRO designated. Because all of the rules and regulations have not been promulgated, it is difficult to know how this will come about, but hopefully one organization can be formed to help insure a healthy peer review organization for the State of Arizona. It is becoming apparent that unless we are willing to accept the changes which are occurring and join in to help, we will be left on the sidelines. Our only chance is to roll up our sleeves and help make the transition as smooth as possible. I urge each member to join their designated PSRO and offer to serve on appropriate committees. The more educated our physician member become, the better they will understand what is transpiring.

Marshall B. Block, M.D.
Editor

Elective Courses in Medical School

It probably started with Hippocrates. Medical education, until very recently, consisted of teaching the same materia in the same fashion to all who wished to become physicians. About 25 years ago, concomitant with the explosion o biomedical and the age of specialization, the electives began to replace some required courses and became an established part of American medical education.

Historically, two things happened simultaneously. The decision to do away with the rotating internship coincided chronologically with the ide to replace the "traditional" fourth yea in which students rotated from specialt to specialty, with an elective fourth year. Electives allow the student to concentrate on the courses needed to prepare for a self-chosen field or specialty. Thus, in one sense, today's medical student starts specializing whil still in medical school.

As early as 1958, the Johns Hopkins University offered a combined undergraduate and medical school program designed to shorten the overall medical curriculum. A segment of this special curriculum was allocate to elective studies. The electives were so popular that only a small percentag of students took the accelerated course; rather, they stayed in school t take as many electives as possible. During the sixties, most medical schoo revised their curricula to include elective time. In 1977, Harvard Medica School lengthened available elective time from four to 17 months. Currentl every medical school in America has some elective time. About a quarter o these schools have an entirely elective fourth year, including the University o Arizona.

The elective fourth year at the niversity of Arizona is monitored by he Electives Subcommittee of the aculty-elected Curriculum Committee. lthough the entire fourth year is lective, some requirements exist. For xample, at least 18 of the 33 units weeks) must be in patient care and at east 18 weeks must also be directly upervised by College of Medicine aculty. Every new elective offering nust be approved by the appropriate epartment head. Students receive redit for electives taken at other nedical schools, or in ambulatory ettings, provided the offering has been pproved by the respective department ead.

A student plans the fourth year rogram, in conjunction with planning or the first postgraduate training year, y meeting with an advisor and eciding together which courses to ke. The Electives Committee reviews very student's request for courses to e sure that the program is balanced nd that all of the College equirements will be met.

Every department participates in the ective program. The department with e largest number of elective offerings Internal Medicine, followed by urgery. In addition to traditional ectives, the College of Medicine ffers 14 interdepartmental seminars cluding medical jurisprudence, athogenesis and approach to nmunologic disease, introduction to omputers in medicine, fluid and ectrolyte balance, and renal nmunology. Some students elect to do search for which they can obtain edit. A small number of students elect ourses in the basic sciences, with harmacology and Anatomy the most pular. The electives which are fully bscribed (or oversubscribed, with a aiting list) are Cardiology, ermatology, Radiology, Emergency edicine, and Internal Medicine binternship.

There is a mandatory evaluation licy and all student evaluations of the ectives are monitored by the Electives ommittee. Student evaluations of ectives have been uniformly good. r example, virtually all of the students dicated last year that the electives ey took were of very good quality d contributed substantially to their ofessional growth. An elective is ely to be a highly thought of and eferred form of education. Students joy a close relationship with one or o faculty in a clinical setting. Most ectives involve patient care and many lude a good deal of supervised dent responsibility for patients. This lps the students gain confidence in eir skills before their housestaff ining begins.

Students often decide to take an elective in the specialty choice they have already made. Also, a student who is going into pediatrics may want an elective in orthopedics because learning something about flat feet and knees is viewed as useful for pediatrics. Often students like to use elective time in order to find out if they really want to go into a specialty, or in order to "sell" themselves at a hospital where they wish to take housestaff training. Some students want as broad a base as possible and, therefore, design a program similar to the old rotating internship.

There is a lingering doubt among some medical educators that the elective year is not always balanced or that the students may not always get maximum benefit from such a year. One medical educator said recently, "The fourth year is a quarter of the curriculum; the faculty should have more control over what the student does with that time." Nationally there is a trend toward less elective time. In 1979-80 about 60% of the medical schools had required course time in the fourth year, with a mean of ten weeks. Last year about 70% had required fourth year courses with a mean of 12 weeks. Thus, there is less time now for electives in most American schools.

Currently the faculty at the University of Arizona College of Medicine is supportive of elective experiences and recognizes them to be an important part of medical education. It is understood that the key to a productive elective year is a good faculty advisory system. As in other areas of medical education, a successful elective program requires a committed faculty and a thoughtful student body.

Marilyn Heins, M.D.
Vice Dean
College of Medicine

Louis J. Kettel, M.D.
Dean
College of Medicine

AHCCCS — The Yavapai County Experience

The Mingus Mountain Shoot-Out

The scene is a hot summer's afternoon in 1982 midway between Prescott and Cottonwood at a secluded Inn on Mingus Mountain. The players are two cadres of physicians and hospital administrators from each side of the mountain. A Republican controlled Arizona State Legislature and a Democratic Governor had mandated the Arizona Health Cost Containment System. Efforts of the Arizona Medical Association to significantly provide input into this process had been thwarted through a sell-out by the opportunistic leadership of the Arizona Academy of Family Practice. With the dangled carrot of federal monies, the politicians had total control. They were determined to force this program down the throats of the Arizona citizenry. The "Marcus Lawrence liberals" were going up against the "Yavapai Community Conservatives" in a show-down on how to handle the AHCCCS program in Yavapai County. Although the situation was onerous to both adversaries at Mingus Mountain that afternoon, two positions surfaced. On one hand, it was thought that AHCCCS was a State program, therefore, the State should run it and let it take a natural course. (Whatever that may be). On the other hand, Yavapai County physicians and hospitals could develop an organization to submit an AHCCCS bid and thereby provide a buffer between health providers and the State. This would be a last ditch attempt to make the State's program digestible, if not palatable. The proceedings that followed lasted until midnight. The gentlemanly and not-so-gentlemanly debate included such terms as: "Whores," "Bastards," "SOB's," "Molesters of Children," and "Perverts."

Such descriptions were attributed primarily to the politicians, but no federal agency, state organization, local authority, or individual personage was immune to the catharsis. Local historians will hence forth recall this incident as "The Mingus Mountain Shoot-out." However, a seed was planted that evening of infamy. It was the idea that if the local physicians and hospitals maintain some bit of local control of policy, and if certain principles were maintained, maybe, just maybe, AHCCCS could work in Yavapai County.

Thou Shalt Not . . . .

The physicians insisted on certain

inviolate principles if they were to participate in any prepaid health plan.

1: A negotiated fee for service would be provided. Yavapai County Physicians had gone on record, with all sincerity, that they would care for indigent patients free-of-charge rather than participate in a State program. Thus, it was not a problem of conscience to be remunerated at a negotiated fee for service and share the risk if a physician payment pool was exceeded.

2: The patient must be provided a choice of local physicians. This also implied that the physician could accept or not accept a patient.

3: Physician's choice of therapy must be respected. The physician was not to be encumbered with "cookbook medicine," a formulary, or any other obstacle in the ordinary practice of medicine. The right to local peer review by the plan was to be preserved.

4: Restriction of the plan to the indigent sector. The State has definite visions of marketing this particular prepaid health program to the private sector. It was the feeling of the Yavapai Physicians that this was an experimental indigent health care program and should be maintained as such until proven to be an effective system of health delivery.

5: Thirty day cancellation of contracts. If unforeseen and unacceptable problems within the plan or with the State developed, it was determined that the physicians must live with it no longer than thirty days.

6: Private offices would be protected from invasions and "witch hunts" by State and Federal authorities.

All of the above principles were included in the individual physicians contracts. These contracts may not conform to the letter of the rules and regulations of the AHCCCS program. They have, however, been approved by the proper authorities.

The Organization

The Northern Arizona Family Health Plan was the organization which evolved from the "Mingus Mountain Shoot-out." It is a corporation of which all the local contracting physicians and hospitals are members. The board of directors consists of eight physicians and two hospital administrators with each member having an equal vote. The physician members select the physician board. The plan policy is established by the board of directors.

The Northern Arizona Family Health Plan is administrated by Community Comprehensive Health, Inc., a locally based health management corporation, with administrative staff and office in both Cottonwood and Prescott. Actuarial studies, the bidding process, problems with the State administrator (MCAUTO SYSTEMS, INC.) and the Arizona State AHCCCS office (Department of Health Services), and claims processing are the primary functions of this organization. The Northern Arizona Family Health Plan has part-time physician medical directors in both Cottonwood and Prescott. The primary duty of the medical director is to maintain quality control within the plan. To assist in this endeavor, an "Alligator Committee," consisting of five physician members of the plan in both geographical locations, monitors quality of care, questionable claims and peer utilization review. One member is rotated on and off each month. All plan physicians have an opportunity to serve on this committee.

In summary, this plan falls within the guidelines of the State mandate of AHCCCS program, but is controlled, managed, and administrated at a local level.

Local Lore

How would the acceptance of an AHCCCS health plan be evaluated? There is no known standard.

To view the Northern Arizona Family Health Plan through the eyes of the politicians, the State agency, or the State administrator would be presumptuous. The sentiments of the involved hospitals, physicians, and patients are known, however, and can be related. The two local general hospitals in Yavapai County elected to capitate inpatient, pharmacy, and ancillary services. The respective financial pools within the health plan have proven to be adequate for the remuneration of the services rendered. Local utilization review is thought to significantly contribute to this success. These services are identical to those available to the private sector. Eighty-five percent of the physicians in Yavapai County have voluntarily elected to contract with The Northern Arizona Family Health Plan. Physicians who do not participate have done so for personal reasons and have not associated with other plans. Physician member payment for services at the negotiated fee schedule has been 100% of usual and customary fees. It has not been necessary to withhold any claims payments because of depleted funds. Remittances have generally been within thirty days. The physicians believe this is their plan and have no objection to local peer review. There are established procedures for both patient and physician grievances. The physicians feel no interference with the medical management of their patients. It is the opinion among the local physicians that the quality of health care is no different than that provided to their private patients.

The patient acceptance of The Northern Arizona Family Health Plan has generally been good. Problems with noncovered services, unauthorized services, and eligibility have arisen. There have been few complaints about physician, hospital, pharmacy, or ancillary services which are covered under the plan.

The success of The Northern Arizona Family Health Plan is not solely financial. It is apparent that quality and quantity of provided health care is comparable to that of the private sector. The reason is primarily that this is a local physician's program. Local physicians have control of the cost of local medical services. The problems of health care delivery in Yavapai County, are somewhat unique to Yavapai County. With local physician involvement in policy making and medical management the unique problems are addressed with reason, experience and understanding.

Physician Win Lose or Draw

The concept of local physician control, management, and provision of health care is certainly not new. Physicians have been doing this on hospital staffs for years. However, the idea of adding a prepaid capitated financial responsibility to health delivery is new to most of us. Actuarial studies were not electives in medical school. The real question is:

Can a traditional private practitioner of medicine survive in a prepaid health plan without the sacrifice of professional, ethical, or financial advantages? Within the experimental model of The Northern Arizona Family Health Plan we believe this is possible, given three distinct conditions:

1: The prepaid capitation rate must be reasonable. A service cannot survive if "going at-risk" means the loss of acceptable fiscal remuneration. Comprehensive health care of a given population must be provided with adequate financial resources for inpatient, ancillary, pharmacy, physician, and dental services. Within The Northern Arizona Family Health Plan, each of the above categories are assigned a separate financial pool by the board of directors. The various providers contracting with the plan must accept the responsibility for offering services within the monitory limits of their respective group's "pools." This eliminates a distasteful situation to a caring physician; this is, to know if he orders services for his patient his individual financial pool is depleted by that amount. By close monitoring and peer review, local physicians have contributed to the financial success of each service within

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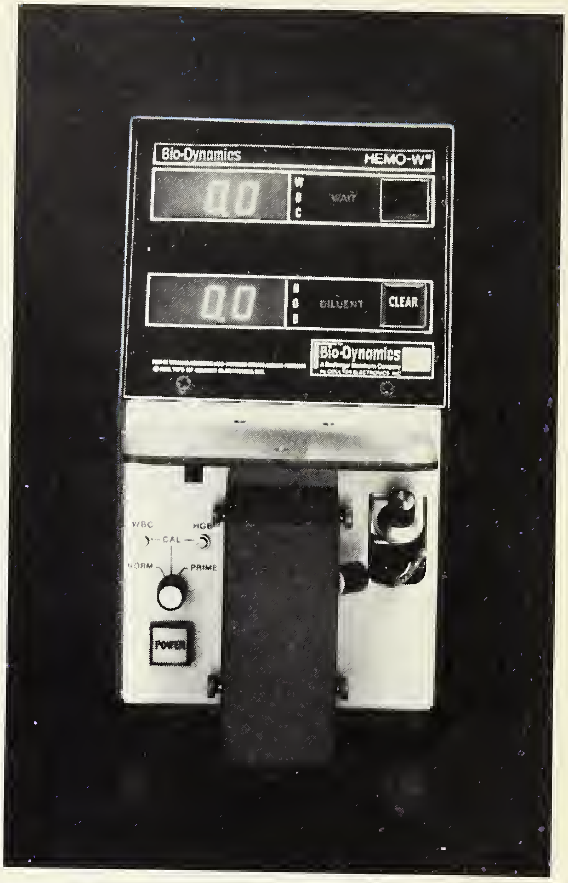

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J-9043-4 July 19

In vitro studies demonstrate

Bactericidal activity

with minimal resistance

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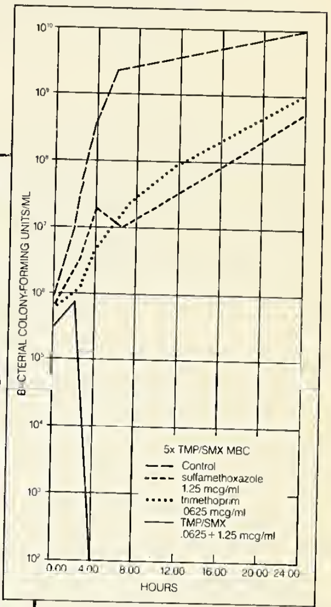
Percent of isolates of common uropathogens sensitive to BACTRIM and to other antimicrobials

	Escherichia coli	*Klebsiella pneumoniae*	*Proteus mirabilis*	*Proteus vulgaris*	*Proteus sp.*	*Enterobacter sp.*	*Enterobacter aerogenes*	*Enterobacter cloacae*
BACTRIM	**96%** 328,598	**89%** 63,551	**93%** 62,691	**84%** 4174	**91%** 4381	**88%** 1736	**96%** 7326	**92%** 11,856
ampicillin	72% 345,209	5% 65,466	85% 67,338	16% 4381	70% 4402	10% 1775	9% 7759	11% 12,091
cephalexin[†]	81% 343,339	85% 67,031	92% 67,027	16% 4398	80% 4365	22% 1834	13% 7571	12% 11,846
nitrofur-antoin	97% 307,785	65% 61,162	7% 59,775	13% 3848	14% 3059	67% 1707	60% 7109	67% 10,830

[†] Analogous to cephalothin, the primary antibiotic disc used in testing.
Source: The Bacteriologic Report, BAC-DATA Medical Information Systems, Inc., Winter Series, 1981-82.
Numbers under percentages refer to the projected number of isolates tested.

RAPID *IN VITRO* DESTRUCTION OF *E. COLI* *



Kill curve kinetics of Bactrim and its individual components against *E. coli in vitro.*[1]

The bactericidal action of Bactrim has been demonstrated *in vitro* on laboratory strains of *E. coli*[1,2] and on clinical isolates of *E. coli, Klebsiella-Enterobacter, Proteus mirabilis* and *Morganella morganii*[3]—the most common causative organisms of urinary tract infections.[4] More than 100 published studies attest to the efficacy of Bactrim in recurrent urinary tract infections due to these organisms.[5] In comparative studies with other antimicrobials, Bactrim has consistently demonstrated unsurpassed efficacy during therapy.[6-11]

Resistance to Bactrim develops more slowly than to either of its components alone *in vitro.** Among urinary tract isolates, resistance has rarely emerged in susceptible strains.[5,12] Bactrim is contraindicated in pregnancy at term, during lactation, in infants less than two months old and in documented megaloblastic anemia due to folate deficiency.

Initial episodes of uncomplicated urinary infections should be treated with a single-agent antimicrobial.

Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

b.i.d. *for recurrent urinary tract infections*

**In vitro* data do not necessarily predict clinical results.

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See next page for references and a summary of product information.

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ 2. Kramer MJ, Mauriz YR, Robertson TL, Timmes MD: Morphological studies on the effect of subinhibitory and inhibitory doses of sulfamethoxazole-trimethoprim combination on *Escherichia coli*. Presented at the 12th International Congress of Chemotherapy, Florence, Italy, Jul 19-24, 1981. 3. Spicehandler J *et al*: *Rev Infect Dis* 4:562-565, Mar-Apr 1982. 4. Stamey TA: *Pathogenesis and Treatment of Urinary Tract Infections*. Baltimore, Williams & Wilkins, 1980, p. 13. 5. Ronald AR: *Clin Ther* 3:176-189, Mar 1980. 6. Cooper J, Brumfitt W, Hamilton-Miller JMT: *J Antimicrob Chemother* 6:231-239, 1980. 7. Gower PE, Tasker PRW: *Br Med J* 1:684-686, Mar 20, 1976. 8. Cosgrove MD, Morrow JW: *J Urol* 111:670-672, May 1974. 9. Iravani A *et al*: *Antimicrob Agents Chemother* 19:598-604, Apr 1981. 10. Schaeffer AJ, Flynn S, Jones J: *J Urol* 125:825-827, Jun 1981. 11. Rous SN: *J Urol* 125:228-229, Feb 1981. 12. BAC-DATA Medical Information Systems, Inc., Bacteriologic Reports, Winter Series, 1976-82.

Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, hepatocellular necrosis, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients. *Pregnancy:* Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, hepatocellular necrosis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: *Not recommended for infants less than two months of age.*

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 20. *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per tea spoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

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The Northern Arizona Family Health Plan.

2: There must be no interference with the practice of medicine from agencies outside the local health plan. Here we must reiterate the point that local medical problems are most efficiently dealt with on the local level. The key that makes this concept valid is local physician control of policy and local active peer utilization review. Each participating physician has total control of his medical practice with full knowledge that his patients are subject to local peer review. This is not a problem as long as he is also aware that he is a necessary participant in the review system. The politicians will ask: "Who are the watch dogs of the local peer review committees?" We can only submit that if local physicians are setting the policies for quality care based on a prepaid financial distribution, their only control is through adequate quality and utilization review. Therefore, is it necessary to have watch dogs for the watch dogs? It is acceptable to have an outside agency approach the local plan for assurance that quality health care is being rendered as evidenced by local utilization review. To have an outside agency pierce the armor of local plan autonomy and invade private offices and patient confidences will lead to a destruction of the local health plan. To date, in The Northern Arizona Family Health Plan, there has been no such incident.

3: Limitation to indigents. As stated earlier, this plan was devised to solve a problem in delivering health care to the indigent. There is no comparable problem in the private sector.

Try It You'll Like it

Physicians have in the past, at the present time, and in the foreseeable future control of the major distribution of the health care dollar. The biggest single health care spender is the U. S. Government. The "Federales" have not yet figured out a way to take control of the hands of physicians. They have come to realize they cannot practice medicine without physicians. The "Feds" need the private sector of medicine to distribute health care. The "Great Arizona Experiment" (AHCCCS) is being observed very closely by the health planners throughout the United States. Will the private sector of the medical practice accept and participate n prepaid health plans? From Arizona's first year experience the answer might be a qualified "yes." Are Arizona physicians happy with prepaid plans and their administration? From Arizona's first year experience the answer might be a qualified "maybe." The most common rumblings heard are typically—"We have three plans in our community; we have not been paid in three months; they tell us we are over-utilizing; some of the patients are not getting decent medical care; they are telling us how to practice medicine; and we don't even know who they are." The Yavapai County experience has been devoid of these criticisms by physicians. Physicians have primary interest in practicing medicine. That is what they do best. They are not organizers. They are not administrators. They are not politicians. They are medicine men. A new system of health care does not bother them too much until it interferes with their professional judgment or does not provide satisfactory remuneration. Only time will tell whether these circumstances will evolve in The Arizona Health Care Cost Containment System. If either of these situations does not arise, local physician owned and operated health plans can, should, and will evolve in the State of Arizona.

The Bottom Line

The "Great Arizona Experiment" has suffered a great deal of criticism and turbulence in the first year. The Arizona Health Care Cost Containment System has not contained cost in Yavapai County. The governmental outlays for health services in Yavapai County is about two and a half times what it was the year preceding AHCCCS. The ambitions to take this system to the general public are fraught with the concern of high cost and rationing of health care. These concerns are valid by the experience thus far. Caution is advised until the experiment is concluded in the indigent sector.

The Yavapai County experience with AHCCCS has been to make the best of a bad situation. The Northern Arizona Family Health Plan is a local solution to the AHCCCS mandate. The problems are being handled very efficiently at a local level by local physicians. The autonomy enjoyed to date could be summarily negated by a similar mandate that caused the plan's inception. There are areas which, if trod upon by politicians or outside authorities, could smother the local health plan. In the interim, the physicians of Yavapai County are committed to continue to provide prepaid health care to the indigent sector and prove that their model plan is the most efficient and successful implementation of the "Great Arizona Experiment."

Joseph B. McNally, M.D.
Prescott, Arizona

Health Care Industry in Crisis

The Health care industry is in crisis. If things continue as they are going we could well see a collapse of the health care system as we know it today. Nationalization, as distasteful as it may be, becomes a possibility.

From my standpoint as an economist as well as the President of Blue Cross and Blue Shield of Arizona, I must tell you that when health care expenditures which now represent 10.5 percent of our Gross National Product, increase at three to five times the overall rate of inflation, our entire economic system is deeply strained.

The affordability of health care is getting and most likely will continue to get enormous local and national attention. Our individual subscribers, business groups, government, providers, the media—everyone wants to know what we're doing about it and what they can do.

The solutions will not be easy. The situation is complex and will demand innovative thinking, some sacrifices and a re-thinking of the traditional delivery and financing of health care. Everyone contributes to the problem—everyone must work together to solve this critical situation.

The dimensions of the health care cost inflation problem are well known.

Between 1965 and 1981, we saw a 700 percent increase in national health expenditures. In 1965, 6% of the GNP was spent on health care—$41.7 billion by 1981, the percentage had swelled to 9.8%. This translates to an increase of *245 billion dollars,* from $41.7 billion in 1965 to $286.6 billion in 1981.

Numbers for 1982 were just released. Health care now represents 10.5 percent of the GNP some $322 billion spent in 1982, an increase over 1981 of 12%. Overall inflation rate nationally for 1982 was only 3.9%.

In Arizona health care costs are currently rising faster than in most of the rest of the country. Figures just released by ASU, through sponsorship of Valley Bank, show second quarter increases for medical care ran 14.3%. Contrast that to the overall inflation rate of nine-tenths of one percent. Certain components of the medical care index are running even higher than the overall figure.

At Blue Cross and Blue Shield of Arizona we are continuing to see the trend line for hospital charges increasing at about 30% and for physicians about 20%. Increases per diem this spring from certain Arizona hospitals ran 35, 45, 55 percent and up. These increases are based on total bills reflecting not only price increases but also what services are ordered. Both hospitals and doctors have contributed.

In addition, only 30% of the average bill is now accounted for by room charges. Seventy percent is from ancillary charges such as surgical supply, pharmacy and welcome kits. These percentages have reversed themselves over the last decade.

Nationally, Medicare costs offer the most dramatic example of health care cost inflation. Expenditures of $44.8 billion in 1981 represent a 1000% increase over the 1967 figure of $4.7 billion—an increase of more than *$40 billion.* Trending this amount outward to 1987, we could expect to see costs of $110 billion. At that rate Medicare would be out of business by no later than the year 1990. This reality is putting pressure on many other areas of the economy.

To keep pace with spiraling health care costs and increased utilization, health insurers such as ourselves have had to raise premiums at rates that frankly are embarrassing as well as being of deep concern and—in many cases we are not keeping up.

One category of our individual, direct pay business which fortunately only affects about 2500 contracts, is now paying over $173 a month for single coverage and $346 for family coverage. By the year 2000 with an annual increase of say 20%, family coverage in many categories could cost over $5,500 a month. Obviously something has to be done. These large expenditures for health care pinpont the need for looking at the key factors influencing the dramatic rise in health care costs. These are:

First, lack of physician and hospital incentives for cost effective practices.

Second, lack of consumer incentives and knowledge to make rational choices about when, where, and why to buy health services;

Third, the questionable usefulness of regulation in the problem; and last, advances in life-saving technology. Let's take a quick look at them.

Hospitals compete only indirectly for patients. The main competition is for doctors who send their patients to the hospital. Hospitals try to stay competitive by expansion of their facilities and purchase of high tech equipment. Tax exempt bonding helps facilitate this growth—growth that ofttimes contributes greatly to the cost of hospital care.

Full insurance coverage for such services further erodes the opportunity for price competition and the potential for using less costly but equally effective service.

However, all insurance coverage is not alike. Of our local Blue Cross and Blue Shield business, about 5% have first dollar coverage. The remainder have some form of cost sharing—like deductibles and co-payments.

On the positive side, health insurance has improved access to care and built one of the best developed health care systems anywhere. This quality of care must be preserved.

Government health regulators in Arizona estimate that Arizona has almost 300 more hospital beds than it will need five years from now, not counting the 1,060 beds that are in hospitals currently under construction. A recent study estimates that an empty hospital bed in Arizona costs $140,000 a year, yet in fast growing Arizona there are still areas and neighborhoods that will need additional beds in coming years. Allocation is a key question.

Consumers delegate to physicians their decision making about medical care because they lack the knowledge to diagnose and treat conditions and are of course, precluded by law from doing so.

The responsibility for medical decision making goes to the physician who acts as the purchasing agent for the patient.

The issue of provider (supply) induced demand is very important in areas like Phoenix where the ratio of physicians to population is slightly higher than the national average and the dominant type of practice is small group—private practice.

In 1970 there were 2,938 physicians practicing in Arizona. By the end of 1981 that number had grown to 6,190 a 113% increase. Nationally during the same period the number of physicians increased only 44%.

Compounding the problem is the fact that most physicians don't know the cost of the services they order so there is no incentive on their part to shop for services that cost less. In addition, they are encouraged by the risks associated with malpractice litigation, as well as by hospitals to use more tests and lab work.

Consumers also have few incentives to shop wisely for cost effective health services because most health care is covered by insurance. Insurance is associated with decreased incentives for patients to find the lowest priced service. Consequently, the degree of price competition in the health market is considerably reduced.

To compound the problem when anything goes wrong there are always attorneys around that ofttimes add to the cost burden that all policy holders have to share or that providers must pass on because of expensive malpractice suits.

In the past several years industry has faced profit erosion due to a soft economy. At the same time health benefit costs have further eroded profit margins. Most large employers locally self insure for employee benefits. Many employers report that the average cost per employee for health care has gone from $711 in 1978 to $1,420 in 1982. Business leaders have good reason to become involved in the health care cost issue. The business community admits they have contributed to the problem of escalating health care costs by providing few incentives for their employees to shop for cost effective care.

Admitting they are part of the problem, employers have joined together to work toward a solution by forming the Arizona Coalition for Cost Effective Quality Care with a membership of about 1,100 employers.

Major leaders in the effort, Honeywell, Sperry, Motorola, and Garrett have an employee force of more than 35,000.

The Coalition has proposed a 2-year moratorium on hospital construction in Maricopa and Pima counties, a cap on rate increases and the creation of a cost containment regulatory commission.

My personal opinion is that artificially placed restraints are not a positive, efficient long term solution to the problem. We have concerns about the initiative action that may well splinter the community. Hopefully, the problem can be solved within the industry without dividing the community or dislocating the economy.

Also involved in working toward some solutions to the problem is the Greater Phoenix Affordable Health Care Consortium made up of business leaders, members of the medical profession, hospital executives, insurance companies, labor and civic leaders. Their basic purpose is to develop a more market oriented approach in community health care.

Hopefully, the right kind of data base will help determine alternate directions that will offer better solutions insuring both quality and affordability

One last factor in the problem is technological growth. Our technical capabilities are extensive and expensive. Big ticket items like NMR (Nuclear Magnetic Resonance), CAT scanners and expensive procedures like heart surgery and end stage renal disease have received a lot of attention in recent years.

However, it may be more important to recognize the cost of critical care. To recognize, for example, the millions of dollars being spent to keep the critically ill alive. However, as long as we are capable of making technologica advances we must acknowledge the role of these advances and their contribution to health care cost nflation. A good portion of the nflation may be justified.

There are numerous new echnological developments that come out of the basic research of the 60's and 70's. Some may promise cost savings vhile others will save or extend lives, out all will add to our total health bill.

For example just 30 years ago the neonatal mortality rate was extremely nigh in Arizona primarily because of he remote location of our native merican population. This condition vas one of the principal reasons for the levelopment of our now sophisticated nedical evacuation system.

It, today, still serves more prenatal nd neonatal emergency patients than hose in any other category. The uccess of this system is reflected in a ramatic drop in infant mortality. In 950 there were 45.7 deaths per housand live births in Arizona, in 1981 nly 11.6. The neonatal (first month of fe) mortality rate in Arizona was 7.4 eaths per thousand live births in 1981 ersus 7.9 for the U.S. However, along vith these livesaving efforts we are now eeing claims for upwards of $50,000 to 75,000 for each premature birth.

Another way of looking at the cost of hese heroic efforts is through data on atastrophic episodes of care. The trend that a small percentage of the opulation is accounting for an creasing proportion of health care xpenditures. One of the important uestions to consider is whether the enefits of technology's expense are hared equally by all. In 1982, *one ercent* of the population generated percent of the expenditures. As I id, these expenditiures may be stified. But now we must ask, what e we doing for the other 99 percent the people. Bioethical questions will ecome increasingly important for our ociety in the 80's.

The Arizona health care system is on e verge of change. We are all going become accountable for our use of ealth care services. We will not be ole to rely on government, insurance, d hospitals alone to take care of us. We are going to be responsible for king better care of ourselves and hen we want services we will have to ake choices with various economic nsequences but directed by centives.

Competition rather than regulation opefully will control the number and cation of hospital beds. Some spitals may have to redefine their les. Hospitals might consider selling leasing unused beds to those who n use them more properly. There ust be some mechanism in the free terprise system to allow us to shift beds without oversupply or artificial freezes.

Private purchasers have a number of options available to them to reduce their financial burden. They can accept the increased cost of insurance, but hopefully limit the increase by expanded out-of-pocket responsibility or reduced scope of services covered. They can also pay less to providers, negotiate rates more stringently, or simply refuse to pay more than a predetermined rate. Insurance companies can help play an important role here as a helpful partner.

What could be some future consequences?

Hospitals may have to limit access to care to those who can pay for it. Services may have to be cut back and high risk patients or uninsured patients may have to be passed on to public facilities. Many people may become disenfranchised having no access to health care services.

Public outrage could be one outcome; tiered services—first class, second class, and third class health care might be another.

More problems may be created than solved, and many opportunities for federal regulations and legislation mandating activities against our judgment may result.

Hopefully these concerns will never happen, but we must challenge ourselves to look beyond quick remedies. Policy implications must be considered. We must determine if our fee-for-service product can be improved to better cope with inflationary pressures. If this is not possible, lower-cost substitute products must be developed and promoted.

At Blue Cross and Blue Shield of Arizona we are already making progress in several areas to help solve the problem including the development of a Preferred Provider Organization called SelectCare. It's a new way to manage health care. The PRO concept offers peer and utilization review and patient incentivies as well as discounted medical rates as a means of controlling expenses.

Reduced rates for PPO subscribers are negotiated with hospitals and physicians, but dollar incentives are built in to encourage quality care in a cost-effective manner. Providers are willing to accept reduced rates because of speedy payment and increased volume of business. The dynamics of the system will offer some savings immediately but more importantly will moderate the rate of premium increases in future years as well as assure quality care by providers.

We are also looking closely at new ways to compensate providers that will create incentives rather than offering a blank check. Paying billed charges may well be fading as the principal method of payment. Concepts, like Medicare's new DRGs (Diagnostic Related Groups) that pay reasonable but set fees to hospitals for some 470 diagnostic categories, merit close future consideration.

These strategies such as PPOs and DRGs build on existing strengths in our health care system. They will need refinement and development and closer future examinations. New incentives and options for better management of our health care system must be sought. Everyone must play a part. Over the months ahead we at Blue Cross and Blue Shield of Arizona will be addressing these policy questions in hopes of developing new directions that will assure affordability and yet continue the quality of care we in America have come to enjoy. We think it can be done—and accomplished fairly quickly within our free enterprise system.

Robert B. Bulla, President
Blue Cross and Blue Shield

Mr. Bulla is President of Blue Cross and Blue Shield of Arizona, This address was presented to the Phoenix Press Club July 19, 1983

The Law: Its Impact on Medical Practice

Transportation Expense Deductions

The IRS permits you to deduct transportation expense for your business or profession even though you are not away from home. Transportation expenses include such items as air, train, bus, and cab fares, and the expenses of driving and maintaining your car. Costs of traveling between your *home* (residence) and usual place of business within the area of your *tax home* (principal place of work or employment) are nondeductible commuting expenses under §262 of the Internal Revenue Code. (Tax Guide for Small Business, IRS Publication 334.)

Physicians' Automobiles

Although physicians have frequently litigated the issue on the deductibility of their automobile expenses, the basic principles were developed in suits brought by nonphysicians. They then were applied across the board to all taxpayers, regardless of the type of work engaged in. The courts have generally supported the Internal Revenue Service in this regard. Also, the courts and the IRS are in agreement that a physician who uses his personal automobile in his practice cannot deduct all of his operating expenses.

The discussion which follows is intended to provide better insight into frequently unpopular IRS and court decisions.

"Tax Home"

The principle that "tax home" is a taxpayer's principal place of business was established by the United States Supreme Court in a 1946 decision which held that transportation costs from such "home" to taxpayer's residence are not deductible (*Commissioner versus Flowers*, 326 U. S. 465, 1946). The IRS has generally defined a taxpayer's "tax home" for purposes of the deduction for reasonable travel and lodging expenses as his *principal* place of business, employment station or post of duty, regardless of where he maintains his personal residence. (IRS [Private] Letter Ruling No. 8121050, February 26, 1981.)

Nature of a Taxpayer's Business or Profession

In the area of personal versus business transportation and travel expenses, no exceptions have been made on the basis of the nature of a taxpayer's business or profession. Nor is the "necessity" of transportation, whether it involves long or short distances from a taxpayer's residence to his place of work a decisive factor. When transportation expenses are incurred by a taxpayer in making daily round trips, requiring no sleep or rest between the taxpayer's residence and place of work, the travel expense deduction in §162(a) of the Internal Revenue Code is inapplicable. (*U.S. versus Correll*, 389 U. S. 299, 1967).

Distance Traveled

Deductibility of commuting costs as ordinary and necessary business expenses is controlled by *U. S. versus Tauferner*, (CA-10, 407 F. 2d 243. 1969, *cert. denied* 396 U. S. 824, 1969), according to the Tenth Circuit's decision in *G. D. Pilcher versus Commissioner* (CA-10, 651 F. 2d 717, 1981), where a pipefitter employed on a construction project who had to travel from his residence in Salt Lake City to Great Salt Lake—a roundtrip of 67 miles—was held not entitled to deduct travel expenses to and from the jobsite.

Controlling Decisions

The Tenth Circuit's decision in *Tauferner* (supra.) are the authorities most frequently cited for the principles applicable to cases in which the taxpayer seeks to deduct costs of travel and transportation as business expenses. In *W. B. Turner versus Commissioner* (56 T. C. 27, 1971), a consultant engineer residing in New York City who daily traveled considerable distances by automobile to work outside the City and home was held by the Tax Court to be a commuter; therefore, his transportation expenses were not deductible under §162(a) of the Internal Revenue Code. Citing *Correll* (supra.) and *Tauferner* (supra.) the court said: Commuting is commuting, regardless of the work engaged in, the distance traveled, or the mode of transportation used. Our path was charted in *United States versus Tauferner*, supra."

In the *Tauferner* case, the taxpayer deducted the cost of his daily transportation between his residence in Brigham City, Utah, and a chemical plant where he worked as a contracts administrator. He traveled back and forth usually by public transportation using his own car only when he had to travel outside the bus schedule. The roundtrip covered 27 miles. Tauferner deducted the costs as ordinary and necessary business expenses under §162(a) of the Code. The IRS denied th deduction on the ground that his travel expenses were no different than that o any commuter.

What Facts Are Determinative

As the Supreme Court said in *Correll* "any rule in this area must make some arbitrary distinctions. The nature of the work engaged in, the distance traveled the mode of transportation, the degree of necessity appear to be unsatisfactory guides with any degree of consistency and certainty. The basic unmodified fact of whether the taxpayer is going t the place where he begins his work or is returning from the place where he ceases work should be determinative. Such travels are expenses within §262 a personal, living or family expenses whether in an urban, suburban, or rura setting. They are not business expenses under §162(a)."

In-Between Transportation

Of course, work patterns differ. One person may travel from his residence t his place of employment and remain there. At the end of his workday, he will return to his residence. Another may require travel from residence to principal place of employment, from there to other work sites, return to his principal jobsite and then home at the end of the workday. Sometimes, this place to place travel will vary, with the first stop in the morning at one of the in-between jobsites, and the last stop before returning home at either another in-between jobsite or the principal place of employment.

The principal question is whether th claimed deductions for transportation are ordinary and necessary business expenses within the meaning of §162(a of the Internal Revenue Code. That is question of fact. The determinative question involving ordinary and necessary business expenses when an automobile is used is whether the taxpayer is going to the place where h begins work and is returning to the place where he ceases work.

Travel between one's residence and regular place of employment is a nondeductible personal expense. "In-between" travel—principal place of employment to another jobsite—is deductible business transportation. Return to the principal place of employment from the other jobsite is similarly deductible. However, travel t the first place of employment or from the last place of employment for the day, whether such place is the "tax home" or an "in-between" jobsite, is nondeductible commuting. *Sanders versus Commissioner*, (CA-9, 139 F.2d 296, 1971).

Extra Duty Travel

A taxpayer employed as a staff physician at a VA hospital made 160 roundtrips by automoblie from his residence to the hospital to fulfill his responsibility for "extra-duty patient care" performed outside his regular duty hours during a taxable year. Each roundtrip was 36 miles. The doctor computed the cost of those trips at $576 and it was this amount that he deducted as business transportation expenses.

In denying this extra-duty deduction, he Tax Court, citing its earlier decision n *M. G. Sheldon* (50 T.C. 24, 1968), aid: "Although commuting expenses re incurred in order to reach one's lace of employment, they are treated s nonbusiness expenses since their mount depends upon the place one hooses to reside—a choice which esults from personal and family onsiderations. This reasoning applies qually to the expense of commuting or regular duty or for extra duty." *. M. O'Hare*, 54 T. C. 874, 1970).

On Emergency Call

In *M. G. Sheldon*, supra; the axpayer, a physician who specialized in nesthesiology, was a full-time mployee at a hospital. Her usual vorking hours, Monday through Friday, vere 8:00 a.m. to 4:00 p.m. In addition, he was on call for 24 hours every other veekday and on call for 48 hours every ther weekend. She had no outside nedical practice.

The anesthesiologist contended that he was entitled to deduct at least 60% f her automobile expenses. She elieved that use of her automobile in esponse to emergency calls received at ome was essential to performance in er employment. Furthermore, it was ot feasible to use public transportation the hospital. The Tax Court held that mergency calls were nondeductible ommuting expenses.

mergency Calls at Social Engagements

A federal district court (*Dr. Phillip enac versus U. S.*, D.C. La., 67-2 USTC 576, 1966) stated that even where a ysician is on emergency call and he kes his business automobile to a cial function for that specific reason, me part, at least, of that ansportation use is a personal one. These uses . . . going to and from ork, going home for lunch, going to cial engagements, even when the ctor is on call, are similar to personal es that everyone has in his personal e, and they are not considered under e law as business uses."

me Departures from the Rules

A few courts, however, have allowed deduction for second hospital trips om home, trips to patients' homes om home after the workday, and nergency visits to the hospital for tically ill patients, *(Karl Wolf versus S.,* D.C., MO., 64-1 USTC *§9211). In J. R. Bovington* (DC, Mont., CV7733H, December 27, 1977), the federal district court allowed a physician to deduct automobile expenses which appeared to include allowances for emergency calls and for trips to hospitals and patients subsequent to the first trip from home. The physician-taxpayer, who lived in Helena, Montana had no set pattern to his daily work schedule. He sometimes started his workday by traveling from his residence either to the hospital, to a nursing home, or to any place involving his practice. He also traveled *between* the various places where he practiced medicine. Also, he was on call at all times of the day and night with respect to patient care.

Although the physician did not keep a record of the actual miles involved in the use of his automobile for his practice and those used for private or other purposes, the court accepted the yearly mileage figure claimed by the doctor as attributable to use in his practice. In this connection, the computation was made on the basis of a claimed 15,000 miles per year at twelve cents per mile, 46 work weeks during the taxable year, five work days each weeks, less four miles round trip between the doctor's office and his home. This resulted in a refund allowed by the Court as follows:

15,000 miles @.12¢ $1,800.00
Less:
46 weeks x 20 (5 days per week x 4 miles per day) x .12¢ per mile $106.40
Deductible under I.R.C. *§162(a) $1,693.60*

Given the trip patterns each day and the fact that the physician was on call at all times during the day and night, one might assume that the physician probably had a number of second from home to hospital trips during the taxable year. If that in fact was the case, then the federal court might not have taken into account the prevailing rule that would have treated these second trips as commuting.

Change in Law and Regulations

In 1976 the Internal Revenue Service issued a ruling (Rev. Rul. 76-453, 1976-2 CB 86) that reconsidered earlier rulings in light of the U. S. Supreme Court's decision in *Correll* (supra), the tax court's decision in *Turner* (supra) and CA-10's decision in *Tauferner* (supra). The ruling provided examples of its latest position. One example in Rev. Rul. 76-453 incorporates facts similar to the "no set pattern" travel in *Bovington* except that the taxpayer's principal place of work is located at his residence. Where these were the facts, the IRS said: "On days that Roe drives to one or more other places of work, the entire amount of transportation expenses is deductible." Before the Ruling could become operative, however, it was withdrawn pursuant to Public Law 95-427 (as amended by Public Law 96-167) which provided that, with respect to transportation costs paid or incurred after 1976 and before June 1, 1981, the revenue ruling in question (and any other regulation, ruling or discussion reaching the same or similar result) was not to be applied to the transportation expenses to which the ruling applied. Instead, such costs were to be determined with full regard to the rules in effect before Revenue Ruling 76-453. It was intended that the provision would allow Congress time to study this matter prior to the effective date of any changes made by new regulations or rules issued by the IRS.

To date Congress has not enacted new law in this area. Since the deadline set by Congress (May 31, 1981) has passed, the IRS is now free to lift its suspension of Rev. Rul. 76-453. No action has been reported by IRS, so it would appear that the ruling continues to be indefinitely suspended.

In order to stay current it is important that you consult with your tax advisor.

Arnold J. Streich
Former AMA Assistant
General Counsel

ArMA and the Specialty Societies—A Working Relationship

"Symbiotic" is an appropriate description of the relationship that exists between the Arizona Medical Association and the specialty societies which utilize ArMA's administrative services.

The relationship benefits the specialty societies by freeing their officers of day-to-day administrative duties, enabling them to concentrate on the scientific and policy-making aspects of their organizations without imposing an undue burden on their medical practice or office staff.

It benefits ArMA by increasing its effectiveness and providing greater economy of operation.

But perhaps the most important benefit of this mutually advantageous relationship is that it strengthens the voice of every physician in Arizona by providing a mechanism to direct towards common goals the diverse interests and activities of the state organization and the specialty societies.

ArMA first introduced the concept of shared administrative services in the early 1970s. Today nine specialty societies with a membership of approximately 1000 physicians along with the prestigious 250 member Medical Society of the United States and Mexico use these services.

For one society, the Arizona Chapter, American College of Emergency Physicians, the arrangement has proved so satisfactory that their new full-time director now has his office in the ArMA building.

Services which the specialty societies can avail themselves of include:

- A permanent headquarters providing a mailing address and telephone number.
- A central repository for records. Working files and archives can be maintained in an orderly manner. No more frantic searching for records with each change of officers.
- A skilled staff sensitive to the needs of the specialty societies. Mrs. Beverly Richter supervises day-to-day administrative activities for each organization. ArMA's controller, Ms. Janet Barkley, handles bookkeeping and financial chores. In addition, the specialty societies have direct access to other ArMA departments including legislative, governmental relations, communication, graphic arts, and printing.

Mrs. Richter describes the activities of her department as "varied, interesting, ever-changing." She says, "No two days are the same so it's always fun to come to work. The day's mail may bring membership applications to be processed or correspondence that must be answered and distributed to society officers.

Beverly Richter

"Or I may work on a newsletter or set-up an Annual Meeting. Things really get hectic in February when two of our largest societies, Anesthesiology and Emergency Physicians, hold their Annual Meetings. Luckily they're not on the same weekend, but each one requires considerable advance planning and coordination. It's a challenge to make everything work the way it should but gratifying when it does."

The beauty of the operation is that each Society can sign up for only those services it requires. And, should a Society's needs change from year to year, it is easy to make adjustments. The Society doesn't have to look for more office space or hire more personnel . . . that's ArMA's responsibility.

Following is a list of specialty societies which ArMA currently serves and a list of services which are available.

Specialty Societies Served by ArMA:

Arizona Society of Anesthesiologists
Arizona Chapter, American College of Emergency Physicians
Phoenix Society of Gastroenterology
Arizona Society of Internal Medicine
Arizona Neurosurgical Society
Arizona Society of Pathologists
Phoenix Psychiatric Council
Arizona Chapter, American College of Surgery
Arizona Urological Society

Services offered by ArMA:

Membership: Set up and maintain current membership records. Receive membership applications and process according to specified procedures. Set up and maintain individual member files.

Correspondence: Originate, receive, and distribute the Society's correspondence.

Files: Prepare and maintain permanent files ncluding correspondence, financial reports, minutes, member files, tax and legal information.

Accounting: Set up and maintain ledgers for the Society's revenue and expenditures. Prepare and mail annual membership dues statements and maintain dues ledgers. Receive statements and prepare checks or signature. Maintain checking accounts.

Meetings: Originate and mail notices for board, general, and educational meetings. Receive and record RSVPs and preregistrations. Staff meetings, ake notes and minutes and prepare them for distribution. Assist program chairman in making meeting arrangements.

Kevin Walker

If you are interested in learning more about what ArMA can do for your specialty society, please contact: The Department of Specialty Society Services, the Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013, telephone: (603) 246-8901, Phoenix, 1-800-482-3480, for other Arizona locations.

What the Specialty Societies Say

Doug Allen, executive director of the Arizona Chapter, American College of Emergency Physicians, told members of his society in the September 1983 newsletter: "In the few months that I have been employed by Arizona ACEP, the State Medical Association staff could not have been more helpful in terms of support and communication. By continuing this close working relationship, both organizations can take a more proactive approach to issues of joint concern."

Earl J. Baker, M.D., president of the Medical Society of the United States and Mexico, says, "We were fortunate to have had a skilled and dedicated volunteer provide our Society with administrative services for many years. But as the organization grew and our activities increased, we realized that we needed a more comprehensive kind of administrative service.

"We needed more space for records, a more specialized financial capability, and, above all, we needed someone who could coordinate activities that take place in two countries.

"It was logical to turn to ArMA. Here we have found Kevin Walker, ArMA's Assistant Executive Vice President and an experienced and able administrator; a complete range of top quality clerical, accounting, printing, and mailing services along with proximity to ArMA's Education Committee which provides CME accreditation for our scientific activities and Arizona Medicine which is the official publication for papers delivered at our annual meeting.

"Everything is under one roof. It's a real asset for the officers and members of the Medical Society of the United States and Mexico."

Briefly Noted

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Lawrence Stern, M.D.

Managing Editor
Bruce E. Robinson

Editorial Assistant
Joan M. Alexander

Suresh C. Anand, M.D., Phoenix, co-authored a paper, "Clinical Trial of a New Long-acting Combination Antihistamine-Decongestant Tablet in the Treatment of Seasonal Allergic Rhinitis," published in *Immunology and Allergy Practice*, May 1983.

Allan Beigel, M.D., Tucson, professor of psychiatry and acting director of university relations at the University of Arizona Health Sciences Center, has been elected to the Institute of Medicine, a group chartered by the National Academy of Sciences to examine national public health policies.

Richard Burk, M.D., Carefree, has been selected as the educational leader of a national study tour of the Soviet Union. The group will spend 14 days in Russia.

William E. Crisp, M.D., Phoenix, was elected vice-president of the Western Association of Gynecologic Oncologists at that organization's May meeting. In August, Dr. Crisp joined members of the University of California faculty at a series of lectures and conferences held at Edinburgh, Leeds, and Oxford Universities.

Manuel Guerrero, III, M.D., Casa Grande, has been elected chief of the medical staff at Hoemako Hospital for 1983-84. Also elected were **Romeo Fandino, M.D.**, vice-president, and **Douglas E. Parkin, M.D.**, secretary.

Philip Levy, M.D., Phoenix, discussed "Diabetes" on ArMA's September *Health Highligths* cable television program.

William Selezinka, M.D., Scottsdale, conducted a week-long seminar for Desert Samaritan Hospital medical staff in Banff, Alberta, Canada in March. He returned to Canada in July to participate in the Sports Medicine Symposium held in conjunction with the World University Games in Edmonton. Dr. Selezinka also addressed emergency room physicians at the University of Missouri Medical Center in Columbia, Missouri, on the topic, "Eye Injuries."

Martin L. Shultz, M.D., Tucson, was elected to a two-year term as president of the new Medical Staff Executive Committee at St. Mary's Hospital and Health Center, Tucson. Also elected were **Thomas E. Newman, M.D.**, president elect; **Roger A. Davis, M.D.**, vice-president; and **Stuart Holtzman, M.D.**, member at large. **Gary L. Henderson, M.D.**, former president wil continue to serve on the committee.

The Arizona Medical Association welcomes the following new members

Maricopa

Sam F. Casano, M.D.
General Surgery
333 East Virginia,
N. 201, Phoenix
University Autonoma
de Guadalajara—1975

Barbara C. Lipschitz, M.D.
Internal Medicine
and Nephrology
3138 East McDowell Road, Phoenix
University of Pennsylvania
School of Medicine—1970

Pima

Raymond F. Carmody, M.D.
Radiology
5675 East Grant Road, Tucson
Indiana University
School of Medicine—1969

William J. Fishkind, M.D.
Internal Medicine and
Ophthalmology
4727 North First Avenue, Tucson
Tufts University
School of Medicine—1972

Alan S. Fleischer, M.D.
Neurological Surgery
University of Arizona
Health Sciences Center, Tucson
New York University
School of Medicine —1966

John P. Williams, M.D.
Anesthesiology
P. O. Box 36538, Tucson
University of North Carolina
School of Medicine—1978

Pinal

James C. Barsz, M.D.
Internal Medicine
108 West Fourth Street, Suite 4,
Casa Grande
University of Arizona
Health Sciences Center—1974

Barbara Allgood, M.D.
General Practice,
Good Samaritan Hospital, Phoenix
University Autonoma
de Guadalajara—1979

Sidney A. Cantrell, D.O.
Family Practice
Phoenix General Hospital

University of Health Sciences,
Kansas City, Missouri—1983
Walter J. Healey, M.D.
Psychiatry
University of Arizona
Health Sciences Center
University of New Jersey
Medical School—1983
Patricia S. Nye, M.D.
Psychiatry
University of Arizona
Health Sciences Center
University of New Mexico
School of Medicine—1981
Mark S. Tinsley, M.D.
General Surgery
Maricopa Medical Center
University of Texas
Southwestern Medical School
at Dallas—1983
Donald E. Tutt, M.D.
Obstetrics and Gynecology
St. Joseph's Hospital, Phoenix
Baylor College of Medicine—1983

CURRENT PERSPECTIVES GOES TO TUCSON

"Diseases of Arizona, Including Cocci"

the second in the ARIZONA MEDICAL ASSOCIATION'S
quality continuing medical education series
will be presented

November 9, 1983
Wednesday, 1:00 P.M.

at the Pima County Medical Society Building
5199 East Farness, Tucson

No charge to ArMA members—nonmembers $25.00

ADVANCED REGISTRATION REQUIRED

Correspondence

ditor—

In the May issue of *Arizona Medicine* r. Alan S. Fleischer had an article egarding Microsurgical evascularization of the Ischemic Brain. e claimed that "if untreated by arotid or EC/IC bypass surgery, 60% of e patients with TIA's will have a roke within one year from resentation and 40% of the surgically ntreated patients who present with inor stroke will have a fatal stroke ithin three years of the initial ictus." I on't know what reference he used for is information but it is far from the xperience of others in the field of roke as we consider it unlikely that ore than one out of three patients ill have a recurrent stroke after a TIA r stroke. The usual incidence of stroke llowing TIA or a stroke is six percent er year. I believe that Dr. Fleischer's ticle is unduly alarming and should ot have been printed. I feel that some rm of retraction is in order.

chard A. Thompson, M.D.
eurological Consultants, Inc.
hoenix, Arizona

Editor—

Recently you may have received a letter from Joseph Campanella, spokesman for the Arizona Coalition for Cost Effective Quality Health Care, a group of businesses with division offices in Arizona. The Coalition has been actively pursuing solutions to controlling the increases in health care costs.

Implicit in the content of Mr. Campanella's letter were a number of statements that would suggest hospitals seek to pass the major cause of the problem of increasing health care costs to the medical community. The letter also contained statistical information regarding hospitals' operating costs and occupancy.

Our concerns with Mr. Campanella's letter are twofold. First, the information is misleading and does not reflect efforts made by all hospitals in the State seeking to be a part of the solution to the health care cost issue. We have actively sought solutions in conjunction with the Arizona Hospital Association by working with the Coalition. Secondly, and of greater importance to Phoenix Baptist Hospital is that the comments in the letter could serve to strain hospital medical/staff relations.

The purpose of this letter is to simply state that our hospital believes that many partners are involved in creating the kind of health care systems we now have—business, labor, government, hospitals, physicians, and insurance companies. A successful longterm solution must involve all of these groups. There is no single cause or one group to blame. In addition, we firmly believe that physicians must be included in every process pointed towards solutions since physicians are an important and primary part of health care. Representatives of the administration of PBH will continue to work where we can to promote these ideals as we have the opportunity in community forums, or as the opportunities present themselves within our hospital and our working committees. I will be happy to review our efforts and work in any way possible with our medical staff to promote cost savings activities that do not detract from the quality medical service we provide.

Jim Bagley
Executive Vice President
Phoenix Baptist Hospital
and Medical Center

CONFLICTS in Medicine

THERE'S NOTHING PHYSICALLY WRONG WITH YOU... PERHAPS IT'S EMOTIONAL!
THEN WHY AM I SO TIRED, RUN DOWN AND WEAK?
BERT WHIT-MAN

Library Talk

Differential Pricing Structure on Journals:

Impact on the Library Budget

Bertha R. Almagro

We are all well aware that proliferation of new titles and exhorbitant price increases are the library budget's worst enemy.

One aspect that perhaps is not as well recognized, is the fact that libraries start with a terrible handicap when taking on new subscriptions, since the price they must pay can be twice as large (even more!) than that paid by an individual subscriber. In order to bring attention to this less known (or perhaps less frequently mentioned) fact, a list of titles has been prepared, which includes institutional (libraries) and personal (individual) pricing structures, indicating the additional dollar amount paid by institutions (libraries).

As journals in the health sciences field are becoming more specialized and cross-overs from one area into others occur more frequently, it is becoming evident that no single health sciences library will be able to afford or collect all the journals that are of interest to its clientele. One way to alleviate the pressure caused by the continuous growth of highly specialized journals on budget expenditure and rapid utilization of limited available space could be achieved if subscriptions for titles servicing a selected group of users would be taken up by the group's departments. This practice should be encouraged since it undoubtedly benefits both the library and the users of this type of publication. The library would have more funds available to subscribe to titles that would serve the interests of wider audience, and also save the money involved in their processing (cataloging) and maintenance (binding claiming, invoicing, shelving). At the same time, precious space needed to house an ever expanding collection would be saved. On the other hand, the users of those highly specialized journals would enjoy absolute access t informationn vital for their work, without the limitations imposed by circulation policies ruling the material housed in the library.

The inconveniences resulting from issues or volumes not being available due to the fact that they might be checked-out, misshelved, or missing, would be eliminated, and all time accessibility would be guaranteed.

In these times of economic austerity librarians, administrators, and users share equal responsibility in insuring the availability of scientific publication that will ultimately benefit and enhanc the achievement of the teaching and research objectives of their parent universities. Let us all endeavor towar this goal!

From: Assistant Librarian for Technical Services, University of Arizona Health Sciences Center Library, Tucson, Arizona 85724.

itle*	Institutional	Personal	Price Difference
cta Anatomica	159.00	111.30	47.70
cta Haematologica	145.00	101.50	43.50
merican Chemical Society Journal	253.00	52.00	201.00
merican Journal of Nephrology	132.00	66.00	66.00
nalytical Chemistry	24.00	18.00	6.00
nesthesia and Analgesia	85.00	50.00	35.00
nnals of Nutrition & Metabolism	119.00	83.50	35.50
udiology	154.00	107.80	46.20
iochemistry	252.00	49.00	203.00
iology of the Neonate	124.00	86.80	37.20
lood Vessels	110.00	77.00	33.00
rain, Behavior and Evolution	97.00	67.00	30.00
ardiology	132.00	92.40	39.60
aries Research	117.00	123.00	54.00
hemotherapy	159.00	111.30	47.70
hild's Brain	128.00	89.60	38.40
ytogenetics and Cell Genetics	199.00	139.30	59.70
ermatologica	106.00	74.20	31.80
iagnostic Imaging	124.00	86.80	37.20
igestion	97.00	67.90	29.10
nzyme	106.00	74.20	31.80
uropean Neurology	177.00	123.90	53.10
uropean Surgical Research	124.00	86.80	37.20
uropean Urology	168.00	117.60	50.40
xperimental Cell Biology	132.00	92.40	39.60
eneral Hospital Psychiatry	88.00	44.00	44.00
erontology	159.00	111.30	47.70
ynecologic and Obstetrics Investigations	79.00	55.30	23.70
ormone Research	88.00	61.60	26.40
uman Development	97.00	48.50	48.50
uman Heredity	159.00	111.30	47.70
nt'l Archives of Allergy & Applied Immunology	195.00	136.50	58.50
ntervirology	88.00	61.60	26.40
vasion & Metastasis	97.00	67.90	29.10
urnal of Affective Disorders	88.00	40.00	48.00
urnal of Communication Disorders	108.00	54.00	54.00
urnal of Medicinal Chemistry	135.00	26.00	109.00
urnal of Organic Chemistry	197.00	38.00	159.00
ephron	97.00	67.90	29.10
euroendocrinology	240.00	168.00	72.00
europsychobiology	141.00	98.70	42.30
RL	97.00	67.90	29.10
ncology	249.00	174.00	74.70
phthalmic Research	159.00	111.30	47.70
phthalmologica	88.00	61.50	26.40
armacology	141.00	98.70	42.30
ychiatria Clinica	106.00	74.20	31.80
ychosomatic Medicine	108.00	54.00	54.00
ychotherapy & Psychosomatics	74.00	51.80	22.20
enal Physiology	106.00	74.20	31.80
espiration	150.00	105.00	45.00
em Cells	92.00	64.40	27.60
rgical Neurology	85.00	40.00	45.00
rvey of Immunologic Research	106.00	53.00	53.00
ends in Pharmacological Sciences	150.00	45.00	105.00
ologia Internationalis	159.00	111.30	47.70
n Sanguinis	88.00	61.60	26.40

rices cited were taken from various publishers' catalogs and could fluctuate. Nevertheless, the chasm between institutional and rsonal subscriptions remains.

ArMA Reports

The minutes appearing in this section have been condensed. A complete copy of them will be sent to any member requesting them.

ArMPAC BOARD OF DIRECTORS

The ArMPAC Board of Directors met on August 23, 1983.

Maude O. Reno resigned from the committee and it was suggested that the president of the ArMA Auxiliary be contacted for a potential replacement.

The Chairman made note of the fact that the ArMPAC money is, according to the bylaws, in two federally insured banks, general fund account and education account. Question was raised about the feasibility of changing the general fund account into an interest producing area. It was moved and carried that staff check into the technicalities and legalities of changing the current general fund account into an income producing account.

The solicitation brochure was discussed and changes were made to the draft. It was moved and carried to accept the brochure with the changes and mail to the ArMA membership with a cover letter by William N. Neubauer, M.D. The cost of mailing to be paid from the education fund of ArMPAC.

It was moved and carried to eliminate the $50 active membership category.

Brochures concerning the AMPAC seminar to be held in Tucson September 30—October 1, 1983 were distributed. The Committee was advised that a mailing of the brouchures would go to southern Arizona members. If the Tucson seminar is successful, a similar one will be held in Phoenix the first part of next year.

PHYSICIAN'S HEALTH COMMITTEE

The Physician's Health Committee met on September 7, 1983.

Dr. Bittker reviewed the history of the committee's work as it relates to working with impaired physicians; the need to obtain insurance to protect the members; the possible conflict with Arizona Revised Statutes that the investigation for insurance uncovered as well as the sharp decline in referrals to the committee. He also reviewed the possible reasons for the decline, i.e., increased BOMEX staffing, development of other resources, such as hospital committees, the Zebra Club, etc.

Mr. Stephen C. Newmark, legal counsel for ArMA, reviewed the legal implications, should the committee wish to continue in this activity. He stated the statutes are very specific in the reporting requirements to BOMEX when an impaired physician is identified. The statute leaves no leeway. As soon as identification is made, the physician *must* be reported. Extensive discussion ensued with many aspects of the problem reviewed in-depth, following which it was moved and carried to discontinue the surveillance activities of the Physician's Health Committee.

A review of statutes of other states was done, with particular emphasis on Georgia, New York, California and Minnesota. It was moved and carried that the Physician's Health Committee would pursue additional information on other state programs with the object of pursuing changes in Arizona statutes permitting the Association to assist the preimpaired physician.

EXECUTIVE COMMITTEE

The Executive Committee met on September 9, 1983.

The committee reviewed the detailed response to the *Round-Up* editorial and determined to forward it to the members of the Board of Directors of the Maricopa County Medical Society, with a one-page letter to all members of the society offering the detailed response to anyone who is interested.

It was agreed that the committee would meet with the Arizona Hospital Association's Executive Committee on 9/23/83 at 4:00 p.m. as requested by them.

Dr. Baker presented his slide presentation "ArMA and Your Medical Practice" which he is showing to the hospital medical staffs throughout Maricopa County.

SCIENTIFIC ASSEMBLY COMMITTEE

The Scientific Assembly Committee met on September 17, 1983.

In the absence of Mr. Schultz, the committee briefly discussed the proposal of Stanley Schultz, Inc. dated March 22, 1983 about conducting future annual meetings of ArMA; and, while there were mixed feelings about the scientific benefit of the suggested format, the committee determined that Mr. Schultz be again invited to attend the next meeting of the committee to discuss his ideas in greater detail.

Along these same lines, Dr. Anderson presented to the committee some thoughts he had for developing a different type of scientific portion to be held in conjunction with the annual business meeting of the Association, wherein a member of each Arizona specialty society would be requested to prepare a program, selecting members of that society to speak on personal experiences, resulting in 20 concurrent one-hour meetings to be conducted throughout a six-hour period for two consecutive days. It was agreed that Dr. Anderson would personally contact some of the specialty societies to see what interest there is in the idea and report back to the committee.

The committee discussed each of the programs scheduled for the 1983-84 Current Perspectives series, reviewing and commenting on program content or making other suggestions as follows:

1. Bioethics—10/15/83—the committee reviewed the program format contained in the brochure entitled "Hard Choices: Ethical Decision-Making in Medicine," and considering the topics to be presented it was moved and carried to immediately send invitations to participate in the 10/15/83 Current Perspectives Program to the Directors of Nursing and Directors of Pediatric Nursing at Arizona Hospitals, said attendance to be without charge. Also, it was recommended that copies of the brochure be provided to Directors of Medical Education for posting on hospital bulletin boards for informational purposes.

2. Diseases of Arizona, Including Cocci—11/9/83—In addition to a review of Dr. Voss' written outline of speakers and topics for his 11/19 program, the committee received from Dr. Voss a change of speakers from Dr. Barry Friedman to Dr. John Galgiani.

3. Cerebrovascular Disease—12/14/83—Dr. Harrington presented to the committee his list of topics and speakers, advising that most would be presenting the same material at a large meeting in February, and requested possible increase in publicizing this particular program, because the U. of A. will be doing a similar program and mailings on it have already gone out. There was a suggestion by the committee that Dr. Harrington determine whether any of the speakers might incorporate a segment relating t the controversies on the experimental treatments.

4. Allergy—1/18/84—The committee reviewed and discussed the program and speakers outlined in Dr. Tan's lett of July 14, 1983.

5. Cancer—2/4/84—Following a review of the tentative outline of

peakers and topics for this program r. Anderson agreed to contact articipants to see if titles could be hanged to allow for broader audience ppeal.

6. Diabetes—3/21/84—Dr. Levy's utline of topics and speakers for this egment of Current Perspectives was eviewed by the committee.

7. The Well Adult & Aging—/26/84—Dr. Baker advised the ommittee of his desires to obtain ational speakers, as well as work a ore firm time frame for the program ince it was to be held in conjunction ith ArMA's 1984 Annual Meeting and equested that he be allowed to work ut the details for the committee's eview during its next meeting.

It was moved and carried to approve he "Current Perspectives" evaluation orm attached hereto, marked Exhibit A" and by this reference incorporated s part of these minutes.

Future Medical Meetings

he following institutions and organizations have een accredited for their continuing medical ducation programs by the Arizona Medical ssociation and/or the Accreditation Council for ontinuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona
 Lung Association
Walter O. Boswell Memorial Hospital,
 Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center
 of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program,
 (THMEP) Tucson
University of Arizona College of Medicine,
 Tucson
Veterans Administration Medical
 Center, Phoenix
Veterans Administration Hospital, Prescott

e accredited institutions and organizations above oduce a variety of continuing medical education ograms. Each accredited institution and ganization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

OCTOBER

Advances in Therapeutics New Drugs
October 21-22. Poco Diablo Resort, Sedona. Sponsor: University of Arizona College of Medicine, Department of Internal Medicine, Office of Continuing Medical Education. Contact: Continuing Medical Education. U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 9.5 hours of Category 1 credit.

Central Neuropsychiatric Association-Sleep and Sleep Disorders
October 21 and 22. Camelback Inn, Paradise Valley. Sponsor: Camelback Hospital. Contact: Dr. George Peabody, 946-4228. Approved for 11 hours of Category 1 credit.

Annual Meeting—Medical Society of the U.S. & Mexico
October 26-29. Morelia, Michoacan, Mexico. Sponsor: Medical Society of the U.S. & Mexico. Contact: Kevin Walker, Executive Secretary, Medical Society of the U.S. & Mexico, 810 West Bethany Home Rd., Phoenix, AZ 85013. Approved for 15 hours of Category 1 credit.

Infectious Diseases—1983
October 22. Arizona Biltmore, Phoenix. Sponsor: Good Samaritan Medical Center. Contact: Division of Infectious Diseases, Department of Medicine, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona 85006. Approved for 7 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification/Provider
October 26-28. Cowden Center, John C. Lincoln Hospital, Phoenix. Sponsor: ACLS, AZ Affiliate Amer. Heart Assn. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona. Provider course approved for 21 hours of Category 1 and Recertification approved for 13 hours.

Geriatric Medicine Today & Tomorrow
October 28-29. Boswell Memorial Hospital, Sun City. Sponsor: Western Division of the American Geriatrics Society. Contact: Marian Richardson, Executive Secretary, 13220 N. 105th Ave., Room 12, Sun City Arizona 85351.

NOVEMBER

3rd Annual Southwestern Poison Symposium
November 4-5. El Conquistador, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 15 hours of Category 1 credit.

Current Perspectives II, Diseases of Arizona, Including Cocci
November 9. Pima County Medical Society Building, Tucson. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Category 1 credit.

New Concepts on Anxiety & Depressive Disorders
November 5. Scottsdale Hilton, Scottsdale. Sponsor: St. Joseph's Hospital & Mental Health Center. Contact: Donald Mesec, M.D., St. Joseph's Hospital & Medical Center, 350 West Thomas Road, Phoenix, AZ 85013. Approved for 8 hours of Category 1 credit.

American College of Physicians Regional CME Meeting
November 11-12. Sheraton El Conquistador, Tucson. Sponsor: American College of Physicians. Contact: Alan L. Gordon, FACP, 2200 N. Third Street, Phoenix, Arizona 85004. Approved for hour per hour Category 1 credit.

Advanced Cardiac Life Support Recertification & Provider
November 16-18. Phoenix. Sponsor: Arizona Affiliate American Heart Association, ACEP. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Road, Phoenix, Arizona 85013. Provider course approved for 21 hours of Category 1 and Recertification course approved for 13 hours.

Prevention and Treatment of Stroke—U. of A. College of Medicine Clinical Seminar Series
November 19. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 credit.

Current Topics in Medicine: Arizona-Sonora Physicians Conference
November 19. Phoenix Country Club. Sponsor: Phoenix Memorial Hospital. Contact: Medical Staff Office, Phoenix Memorial Hospital, 1201 South 7th Ave., Phoenix, Arizona 85036. Approved for 6 hours of Category 1 credit.

Selected Topics on Malignant Melanomas and Inflammatory Diseases of the Skin
November 19-20. The Cottonwoods Resort, Scottsdale. Sponsors: Arizona Medical Association and Arizona Society of Pathologists. Contact: Beverly Richter, Arizona Society of Pathologists, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 7 hours of Category 1 credit.

Annual Fall Pediatric Conference—Allergy & Asthma
November 26-27. Scottsdale Doubletree. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 8.25 hours of Category 1 credit.

THE MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO
• XXXI Annual Meeting • October 26-29, 1983 •
• Morelia Convention Center • Morelia, Michoacan •
Partial Program

NOTE: **Upon arrival presentors should check the final program, as dates and times may vary from this partial program**

Wednesday, October 26

3:00 p.m. - 6:00 p.m.	**Registration**
8:00 p.m. - 9:00 p.m.	**Opening Ceremonies** Cocktail Party **Special Lecture:** Morelia and Mexican Independence Dinner to follow

Thursday, October 27

7:00 a.m. - 1:00 p.m.	**Registration**
7:00 a.m. - 8:00 a.m.	**Breakfast for Participants**
8:00 a.m. - 9:30 a.m.	**Symposium** The Panorama of Treatment in Coronary Heart Disease *Jay Silverman, M.D., Cardiologist, Nogales, Arizona* *Hugh B. Hall, M.D., Cardiologist, Phoenix, Arizona* *Manuel Lopez de Lopez, M.D., Cardiac Surgeon, Guadalajara, Jalisco*
9:30 a.m. - 10:30 a.m.	**Special Lecture** New Frontiers of Gastrointestinal Endoscopy *Robert L. Protell, M.D., University of Arizona, Tucson, Arizona*
10:30 a.m. - 10:50 a.m.	**Coffee Break**
10:50 a.m. - 1:10 p.m.	**Regular Program** These fifteen minute presentations with five minutes for discussion will be precisely timed. A full complement of Regular Program papers *from Mexico* will alternate with the U.S. papers in the final program. Nuclear Medicine in the Diagnosis of Gastrointestinal Bleeding *S. V. Hilts, M.D., Tucson, Arizona* Nectrotizing Fasciitis *H. W. Hale, Jr., M.D., Phoenix, Arizona* *Mary E. MacGuire, M.D., Phoenix, Arizona* Implantable Chemotherapy Pump in Carcinoma of the Liver *William N. Neubauer, M.D., Tucson, Arizona*
1:30 p.m.	**Social Program** Lunch at Lake Patzcuaro Boat ride, typical music and folkloric dances
La Noche	Cathedral Organ Concert with Morelia Children's Choir

Friday, October 28

7:00 a.m. - 8:30 a.m.	**Breakfast for Participants**
8:30 a.m. - 10:00 a.m.	**Symposium** Factors in the Rejection Reaction of Organ Transplantation *James L. Parsons, M.D., Internist, Tucson, Arizona* *Georgetta C. Bidwell, M.D., Nephrologist, Phoenix, Arizona* *Librado Ortiz, M.D., Immunologist, Guadalajara, Jalisco*
10:00 a.m. - 11:00 a.m.	**Special Lecture** International Health and Population Issues of Concern to Physicians *James E. Sarn, M.D., M.P.H., Director, Washington, D.C.* *Agency for International Development, U.S. State Department*

11:00 a.m. - 11:20 a.m.	**Coffee Break**
11:20 a.m. - 1:00 p.m.	**Regular Program** These fifteen minute presentations with five minutes for discussion will be precisely timed. A full complement of Regular Program papers *from Mexico* will alternate with the U.S. papers in the final program. Physiology of Calcium Channel Blockers in Arteriosclerotic Heart Disease *James F. Stagg, M.D., Tucson, Arizona* Patterns of Asthma *Brendan D. Thomson, M.D., Phoenix, Arizona* A Total Replacement with a Silastic Prosthesis—A Seven Year Saga *Richard G. Sanderson, M.D., Tucson, Arizona*
1:00 p.m. - 2:00 p.m.	**Business Meeting**
La Noche	Social Program Mexican Fashion Show Presidential Ball

Saturday, October 29

7:00 a.m. - 8:30 a.m.	**Breakfast for Participants**
8:30 a.m. - 10:00 a.m.	Radiographic Imaging 1984 *Lawrence Ganter, M.D., Diagnostic Radiologist, Phoenix, Arizona* *S. V. Hilts, M.D., Nuclear Radiologist, Tucson, Arizona* *Glenn C. Cook, M.D., Diagnostic Radiologist, Phoenix, Arizona*
10:00 a.m. - 11:00 a.m.	**Special Lecture: Mexico City**
11:00 a.m. - 11:20 a.m.	**Coffee Break**
11:20 a.m. - 1:00 p.m.	**Regular Program** These fifteen minute presentations with five minutes for discussion will be precisely timed. A full complement of Regular Program papers *from Mexico* will alternate with the U.S. papers in the final program. Intranasal Steroids for Obstructive Disease *Neil O. Ward, M.D., Phoenix, Arizona* *Dennis W. Berry, M.D., Phoenix, Arizona* Current Status of Child-Phillips Intestinal Plication Operation *Jack D. McCarthy, M.D., Albuquerque, New Mexico*
La Tarde	**Luncheon at Hotel Calinda** **and Departure to Guadalajara**

The XXXI Annual Scientific Meeting of the Medical Society of the United States and Mexico is sponsored by the Arizona Medical Association, Inc. The Arizona Medical Association certifies that this activity meets the criteria for 15 credit hours in Category 1 for the ArMA Certificate in Continuing Medical Education and the AMA Physician's Recognition Award. In addition, application has been made for 15 hours of Category 1 credit by the American Academy of Family Physicians.

For additional information, contact: Kevin Walker, Executive Secretary, 810 West Bethany Home Road, Phoenix, Arizona 85013, (602) 246-8901.

Ericksonian Approaches to Hypnosis & Psychotherapy
November 30-December 4. Phoenix Civic Plaza. Sponsor: Arizona State Hospital and Milton H. Erickson Foundation. Contact: Jeffery K. Zeig, Ph.D., Milton Erickson Foundation, 3606 North 24th Street, Phoenix, Arizona 85020.

DECEMBER

Arthritis and Rheumatic Diseases—U. of A. College of Medicine Clinical Seminar Series
December 3. Phoenix Hilton. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85713. Approved for 7 hours of Category 1 credit.

Problems in the Diagnosis and Management of Breast Cancer
December 5-7. Scottsdale Arizona. Sponsor: American Society of Clinical Pathologists. Contact: Regional Education Activities, 2100 West Harrison Street, Chicago, Illinois 60612. Approved for 19 hours of Category 1 credit.

12 Annual Radiology Seminar
December 9-11. Camelback Inn, Scottsdale. Sponsor: Maricopa Medical Center. Contact: Office of Continuing Medical Education, 2601 E. Roosevelt, Phoenix, Arizona 85006. Approved for 22 hours of Category 1 credit.

Gastrointestinal Diagnosis—Workshops in Gastroenterology and GI Radiology
December 9. Camelback Inn, Scottsdale. Sponsor: Maricopa Medical Center, Department of Radiology. Contact: Alex Newman, M.D., Department of Radiology Maricopa Medical Center, P.O. Box 5099, Phoenix, Arizona 85010. Approved for 22 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification and Provider
December 14-15. Phoenix. Sponsor: Arizona Affiliate, American Heart Association, ACEP. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider Course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Current Perspectives III
Cerebral Vascular Disease
December 14. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Rd., Phoenix, Arizona 85013. Approved for 3½ hours of Category 1.

JANUARY 1984

Musculoskeletal Diseases in the Aged
January 26-28. Point Tapatio Resort, Phoenix. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 N. 19th Street. Phoenix, Arizona 85006.

Today's Challenges in Allergy and Immunology
January 28. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 7 hours of Category 1 credit.

ECG Interpretation and Arrhythmia Management
January 27-29. Marriott Hotel, Tucson. Sponsor: International Medical Education Corporation. Contact: IMEC, 64 Inverness Drive, East, Englewood, Co. 80112. Telephone: 800-525-8651 or 303-790-8445, ext. 123. Approved for hour per hour Category 1 credit.

PEDIATARIC UPDATE—1984
The Pierre Marques Hotel
Acapulco, Mexico
January 10-15, 1984

Sponsored By: Department of Pediatrics, Schneider Children's Hospital, Long Island Jewish-Hillside Medical Center, New Hyde Park, N.Y.

Faculty: Philip Lanzkowsky, M.D, Lewis A. Barness, M.D., Abraham D. Bergman, M.D., Leon Eisenberg, M.D., and Saul Krugman, M.D.

Credits: 18 hours of Category 1 ACCME.

For Information: CE Coordinator, Long Island Jewish-Hillside Medical Center, New Hyde Park, N.Y. 11042, (212) 470-2114.

EIGHTH ANNUAL UNIVERSITY OF UTAH SEMINAR ON SEXUAL FUNCTION/DYSFUNCTION
Park City, Utah
January 27-29, 1984

CME & CE Credit. Contact: Conferences and Institutes, University of Utah, DCE, 1120 Annex Building, Salt Lake City, Utah 84112, (801) 581-5809.

FAR WESTERN MEDICAL ASSOCIATION
January 28—February 4, 1984
Sun Valley, Idaho

Theme: "What's New in Medicine and Surgery"

Spring Scientific Meeting
March 3—17, 1984
Cortina, Italy (first week)

Theme: "Medicine in Europe Today"

Approved for hour per hour Category 1 credit

Please write to:
Far Western Medical Association
P.O. Box 3817
Van Nuys, California 91407
for detailed information

1984 CME CRUISE/CONFERENCES ON LEGAL—MEDICAL ISSUES

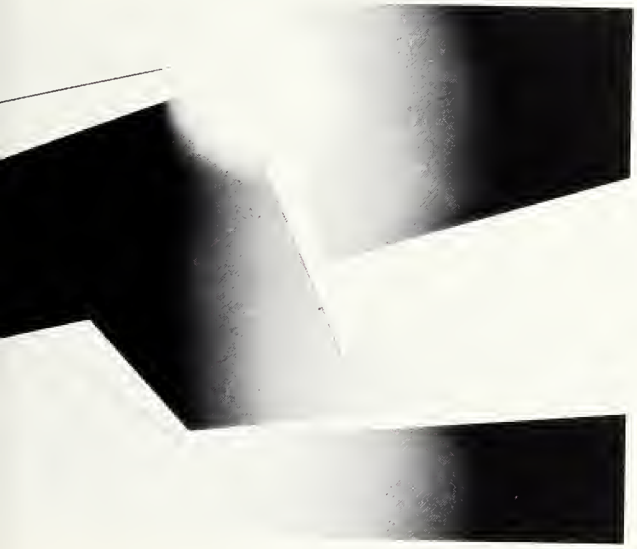
Caribbean, Mexican, Hawaiian, Alaskan, Mediterranean. 7—14 days in Winter, Spring, Summer. Approved for 18-24 CME Category 1 credits (AMA/PRA). Distinguished professors. FLY ROUNDTRIP FREE ON CARIBBEAN, MEXICAN, & ALASKAN CRUISES. Excellent group fares on finest ships. Registration limited. Prescheduled in compliance with present IRS requirements. Information:
International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

CURRENT CONCEPTS IN CRITICAL CARE MEDICINE



October 29, 1983
Arizona Biltmore Resort
Presented by
Humana Hospital Phoenix
Sponsored by
iversity of Arizona College of Medicine
Arizona Thoracic Society
dical Section Arizona Lung Association

more information, please call 241-7638

Agenda

7:15 am–7:45 am	Registration
7:45 am–8:00 am	Introduction

Welcoming Remarks by:
Richard P. Blackburn, Executive Director,
Humana Hospital Phoenix.

Critical Care at the Cellular Level

Moderator: Allen Lipschultz, MD

8:00–8:45	Fluid and Electrolyte Abnormalities in Critical Care Situations **George Ackerman, MD**
8:45–9:30	Oxygen Transport in the Critically Ill Patient **Arnold Aberman, MD**
9:30–10:15	Problems in Acid-Base Balance: Metabolic Acidosis **Arnold Aberman, MD**
10:15–10:30	QUESTIONS & ANSWERS AND BREAK

Crisis in Critical Care

Moderator: Allen Lipschultz, MD

10:30–11:10	Meningitis **Dennis Maki, MD**
11:10–11:40	Status Asthmaticus **Sammy Campbell, MD**
11:40–12:10	Adult Respiratory Distress Syndrome, New Trends **Roger Bone, MD**
12:10–12:45	Acute Myocardial Infarction **Robert Conn, MD**
12:45–2:00	Luncheon Panel **All Speakers**

Problems in Critical Care

Moderator: Stephen Leshin, MD

2:00–2:40	Monitoring Respiratory and Hemodynamics in the Critically ill Patient **Roger Bone, MD**
2:40–3:20	Congestive Heart Failure **Robert Conn, MD**
3:20–3:35	QUESTIONS AND ANSWERS
3:35–4:25	Newer Use of Antibiotics in the Critically Ill Patient **Dennis Maki, MD**
4:25–5:15	Ventilatory Effects of Drugs in the Critical Care Setting **Sammy Campbell, MD**
5:15–5:30	QUESTIONS & ANSWERS ADJOURN

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.
A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 p.m., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 p.m. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 p.m., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.
Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.
Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept. & Nov.
Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: L.A. Rosati, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.
Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.
Pediatric Case Conference
2nd Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.
Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.
Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.
Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.
Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.
Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.
Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

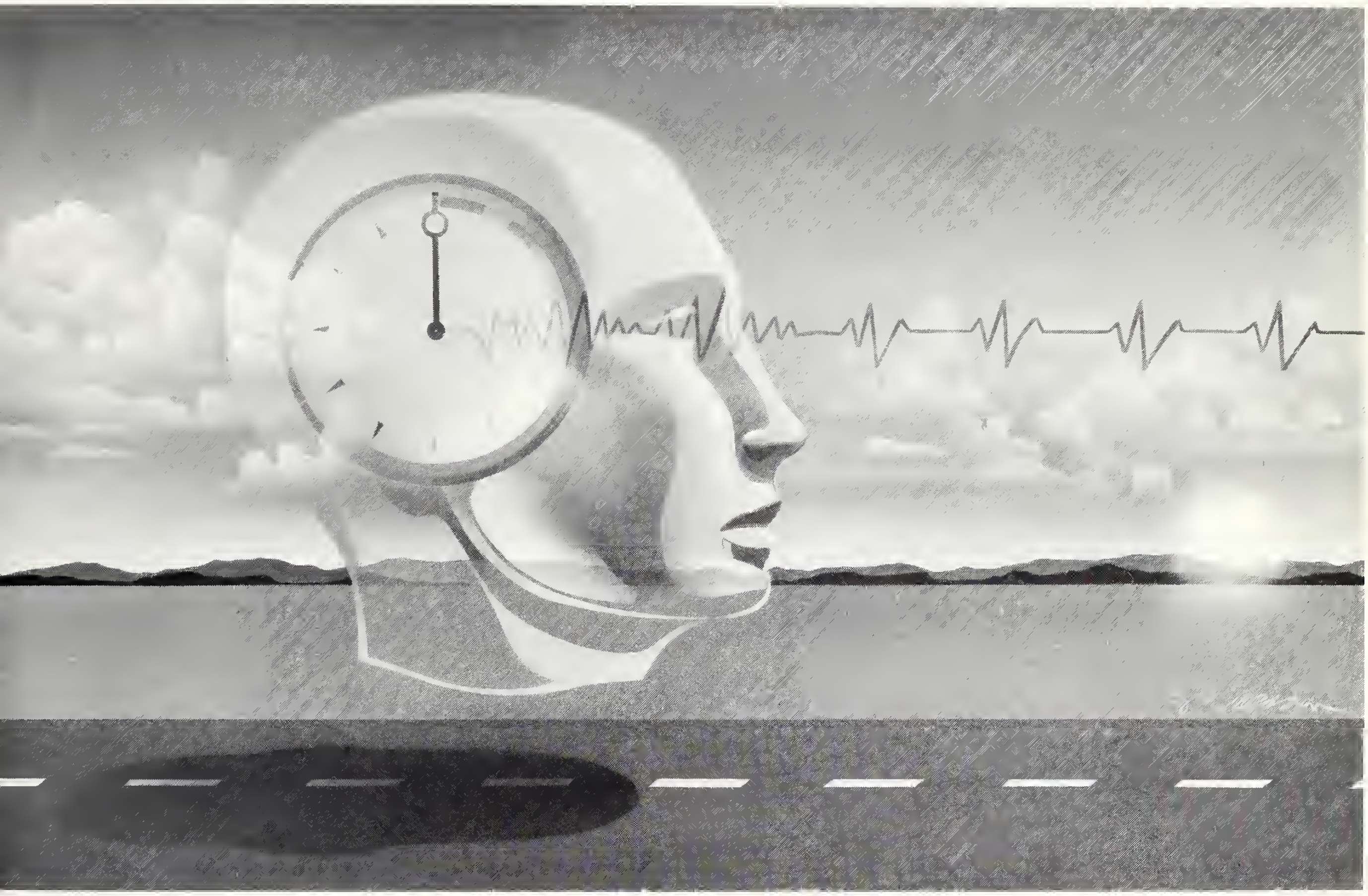
GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.
Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.
Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.
Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.
Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.
Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.
Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.
Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.
Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.
Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.
Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.
Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.
Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.
Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.
Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.
Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.
Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.
Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.
Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.
Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.
Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident
OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.
Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

What you don't know about trauma could kill somebody.



Last year, more Americans were killed
by trauma than were killed in the entire Vietnam War.
The shame of it is, about half of those 100,000
lives could have been saved with proper treatment.
But it takes 45 life-saving decisions within just 30 minutes.
Do you know enough to make the right decisions?
If you'd like to sharpen your trauma skills, join us in Phoenix
for our third annual symposium, Trauma Care '84.

Please send me more information on Trauma Care '84, February 19-22.

NAME ____________________ ORGANIZATION ________________

ADDRESS ____

CITY _________________________ STATE ____________ ZIP ______

MAIL TO: Trauma Care National Symposium John C. Lincoln Hospital & Health Center
9211 N. 2nd Street, Phoenix AZ 85020 OR CALL: (602) 943-2381 Ext. 1736

TRAUMACARE
1 9 8 4

Musculoskeletal Diseases in the Aged

a national, multi-disciplinary conference

January 26-28, 1984
at the Pointe Tapatio Resort, Phoenix

The conference will feature presentations by noted authorities in the fields of orthopedic surgery, preventive and rehabilitative medicine, rheumatology, gerontology and psychiatry. Guest faculty members will include Louis V. Avioli, M.D., St. Louis · John Baum, M.D., Rochester, New York · Stanley J. Brody, J.D., MSW, Philadelphia · Mack L. Clayton, M.D., Denver · A. Seth Greenwalt, D. Phil. (Oxon), Cleveland · Herbert Nickens, M.D., M.A., Rockville, Maryland · Fran Roberts, R.N., M.S., Phoenix · Isadore Rossman, Ph.D., M.D., New York City · Robert G. Volz, M.D., Tucson.

Sponsored by St. Luke's Medical Center, Phoenix
Robert R. Karpman, M.D., Conference Chairman

For additional information, contact:
Christine Campbell
Director of Medical Meetings
St. Luke's Medical Center
1800 E. Van Buren, Phoenix, Arizona 85006
(602) 251-8402

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008.
Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Problem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..

Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.

Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.

Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.

Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.

OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.

Surgery
Weekly, Wednesday, 7:00 a.m.

Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.

Psychiatry Staff
1st Wednesday, 11:00 a.m.

Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.

Medicine Cardiology
1st Wednesday, 12 Noon.

Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.

Medicine Mortality
3rd Wednesday, 12 Noon.

Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.

Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.

Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.

Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.

Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..

Anesthes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7 :30 a.m.

Anesthesiology Journal Club
4th Thursday, 8:00 a.m.

Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.

Burn Mortality Conference
4th Thursday, 8:00 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.

Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.

AMA Hospital Medical Staff Members:

Strengthen Your Role In Decision-Making... Influence AMA Policy!

The AMA Hospital Medical Staff Section Second Assembly Meeting December 1-5, 1983 Los Angeles, California

As a Hospital Medical Staff Representative, you should plan now to attend this four-day AMA Hospital Medical Staff Section Assembly Meeting. You will have an opportunity to contribute to the decision-making process and participate in developing policy that will address the issues and concerns of physicians on hospital staffs.

The AMA Hospital Medical Staff Section provides representatives from hospital medical staffs with a forum to discuss common problems and changes in physician-hospital relations, and a direct voice in policies being considered by the American Medical Association.

Group sessions will be conducted on various topics of interest to hospital medical staff members. Scheduled presentations will include: diagnostic related groups (DRGs), credentialing, hospital contractual relations, prospective reimbursements, and overall relationships between physicians and hospitals.

Here's your opportunity to effect change. For information contact the AMA Department of Hospital Medical Staff Services at (312) 751-6656.

OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.

Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.

Medicine Endocrinology
1st Friday, 12 Noon.

Medicine Infectious Disease
2nd Friday, 12 Noon.

Medicine/Radiology Conference
3rd Friday, 12 Noon.

Medicine Cardiology
4th Friday, 12 Noon.

OB/GYN Tumor Board
4th Friday, 12 Noon.

Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.

GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.

Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.

Pediatric Dermatology
3rd Friday, 12 :30 p.m.

Pediatric Infectious Disease
4th Friday, 12:30 p.m.

Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.

Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.

CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.

Otolaryngology Grand Rounds
4th Wednesday, 4:00-5:00 p.m., Conference Rm. A, Contact: N. Wendell Todd, M.D.

Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.

Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.

Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.

Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251.
Contact: W. S. Williams, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.

Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.

Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.

CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.

Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.

Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.

Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.

Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.

Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.

Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.

Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.

Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.

GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.

Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.

Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.

Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.

Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.

Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.

Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.

Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.

Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.

Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.

Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.

Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.

Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.

Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.

Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.

Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.

Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.

ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.

Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.

Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.

Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.

Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711
Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.

Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium

Surgery Department Conference
4th Monday, 12 Noon, Auditorium.

Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.

Ophthalmology Case
2nd Tuesday, 7:30 a.m.

Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium
Contact: Leonard Joffe, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716.
Contact: Eric G. Ramsay, M.D. Approved fo Category 1 credit.

Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.

Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.

Endocrinology Conference
4th Monday, 12 Noon, Contact:
M. Parker, M.D.

Nephrology Conference
2nd Monday, 12 Noon, Contact:
Stephen Seltzer.

Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact:
Howard Winkler, M.D.

Perinatal Conference
2nd Tuesday, 7:00 a.m.

Surgical Conference
2nd Tuesday, 7:15 a.m.

Hematology Conference
4th Tuesday, 12 Noon, Contact:
Gerald Giordano, M.D.

Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon,
Contact: B. Friedman, M.D.

Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact:
Jay Katz, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact:
Dr. Lightner.

Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact:
Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact:
Dr. Fuchs.

Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April,
July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact:
M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact:
H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact:
N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon, Contact:
Cancer Committee.

GI Conference
Weekly, Friday, 12 Noon, Contact:
Charles Sanner, M.D.

nterhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact:
S.V. Hilts, M.D.

OB/GYN Conference
st Friday, 7:30 a.m., Contact:
Charles Parker, M.D.

OB/GYN Pathology Conference
rd Friday, 7:30 a.m., Contact:
. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

th Street and Indian School Road,
hoenix, AZ 85012. Contact: Alfred
Heilbrunn, M.D. Approved for Category 1
redit.

Medical/Surgical GI Conference
st & 3rd Monday, 3:00 p.m., Rm. 3134,
Contact: Dr. Kozarek, Ext 413. Dr. Mertz,
Ext 493.

Cancer Symposium
nd Monday, 3:00-4:00 p.m., Rm T5,
Contact:
r. Byrne, Ext. 426.

Orthopedic Surgery Conference
nd Monday, 7:30 a.m., Rm 3134, Contact:
r. Russo.

Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact:
Dr. Mertz & Dr. Lanard.

GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs.
Sanowski & Schaffner, after GI Grand
Rounds, Rm. T-5.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5,
Contact: Dr. Sanowski.

GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5,
Contact: Dr. Sanowski.

Urology Histopathology Conference
Weekly Tuesdays, 8:00-9:00 a.m., Rm 2410,
Contact: Drs. Haddad & Kivirand, Ext. 417.

Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m.,
Room 4115, Contact: Dr. Rohwedder, Ext.
388.

Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5,
Contact: Dr. Habib.

Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115
Contact: Dr. Rohwedder.

Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11:00 a.m.,
Rm. T-5, Contact: Dr. Zeller.

Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact:
Dr. Zeller.

Urology Conference
Weekly Friday. 12:00-1:00 p.m., Room 3134,
Contact: Dr. Haddad, Ext 418.

Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134,
Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed
below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ
85723. Contacts listed below. Approved for
Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact:
Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital
Staff Conf. Rm. & (AHSC), Contact:
Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact:
Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m.,
Rm. N318, Contact: Dept. of Internal
Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107,
Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact:
Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact:
Alan Winfield, M.D. Approved for Category
1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine,
Tucson, AZ 85724. Robert M. Anderson,
M.D., Dir. of CME. Contact: See below.
Approved for Category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 p.m., AHSC
Dining Rm. C&D, Contacts: Dr. Vaughn &
Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room
5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC,
Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining
Room, C&D, Contacts: Drs. Otto &
Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m.,
HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact:
Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr.
Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact:
Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact:
John Boyer, M.D., Dept. of Internal
Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm.
5505., Contact: Jerry Goldstone, M.D.,
Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact:
Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact:
Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact:
Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m.,
Contact:
Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact:
Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1:00 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach.

Vascular Surgery Conference
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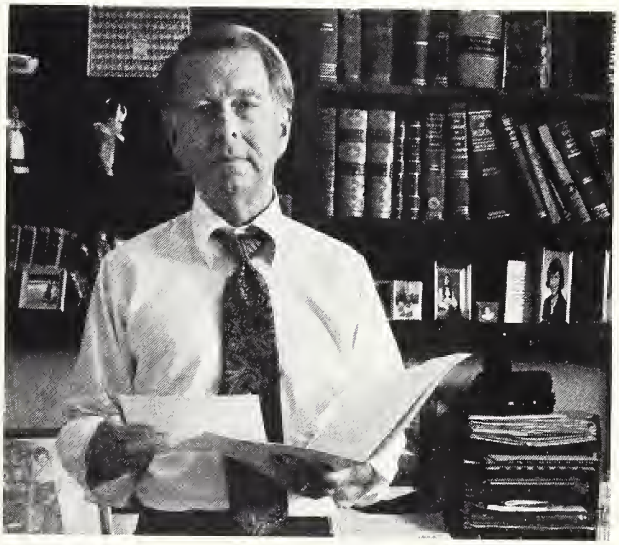

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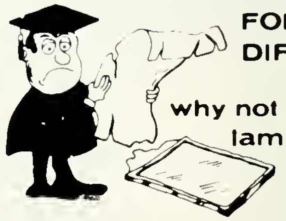

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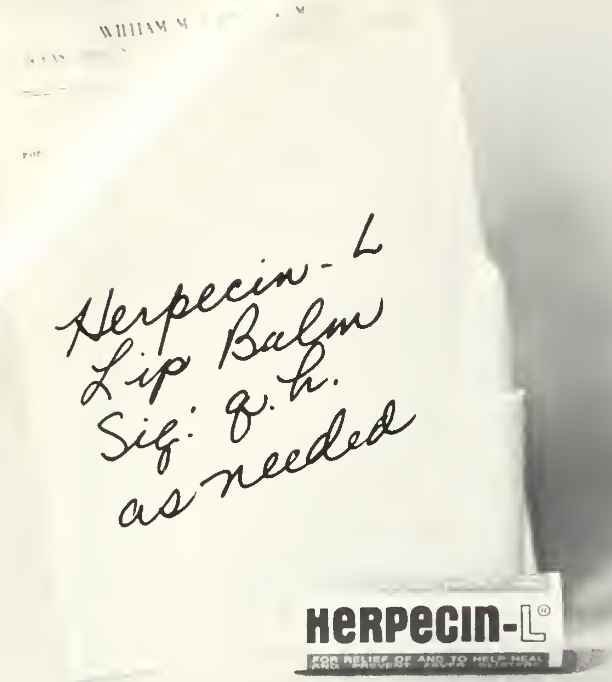

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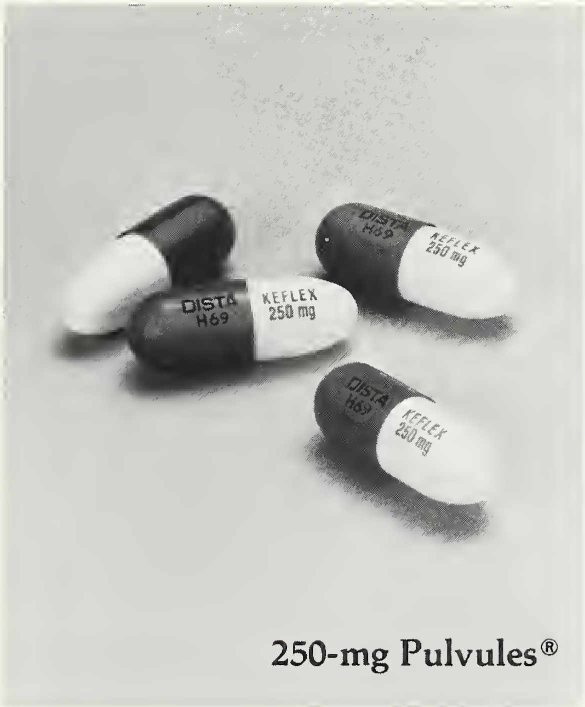

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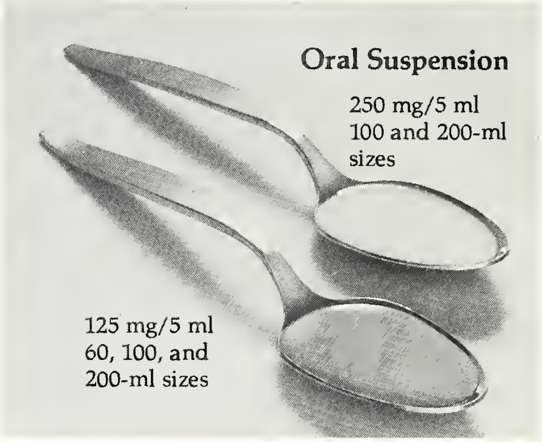

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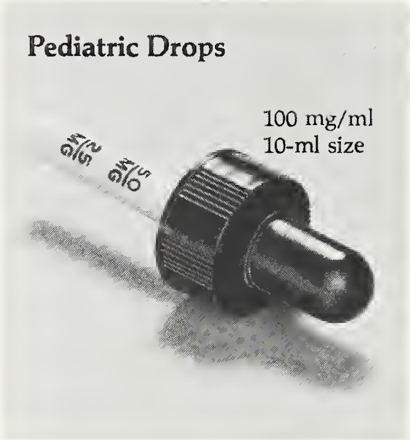

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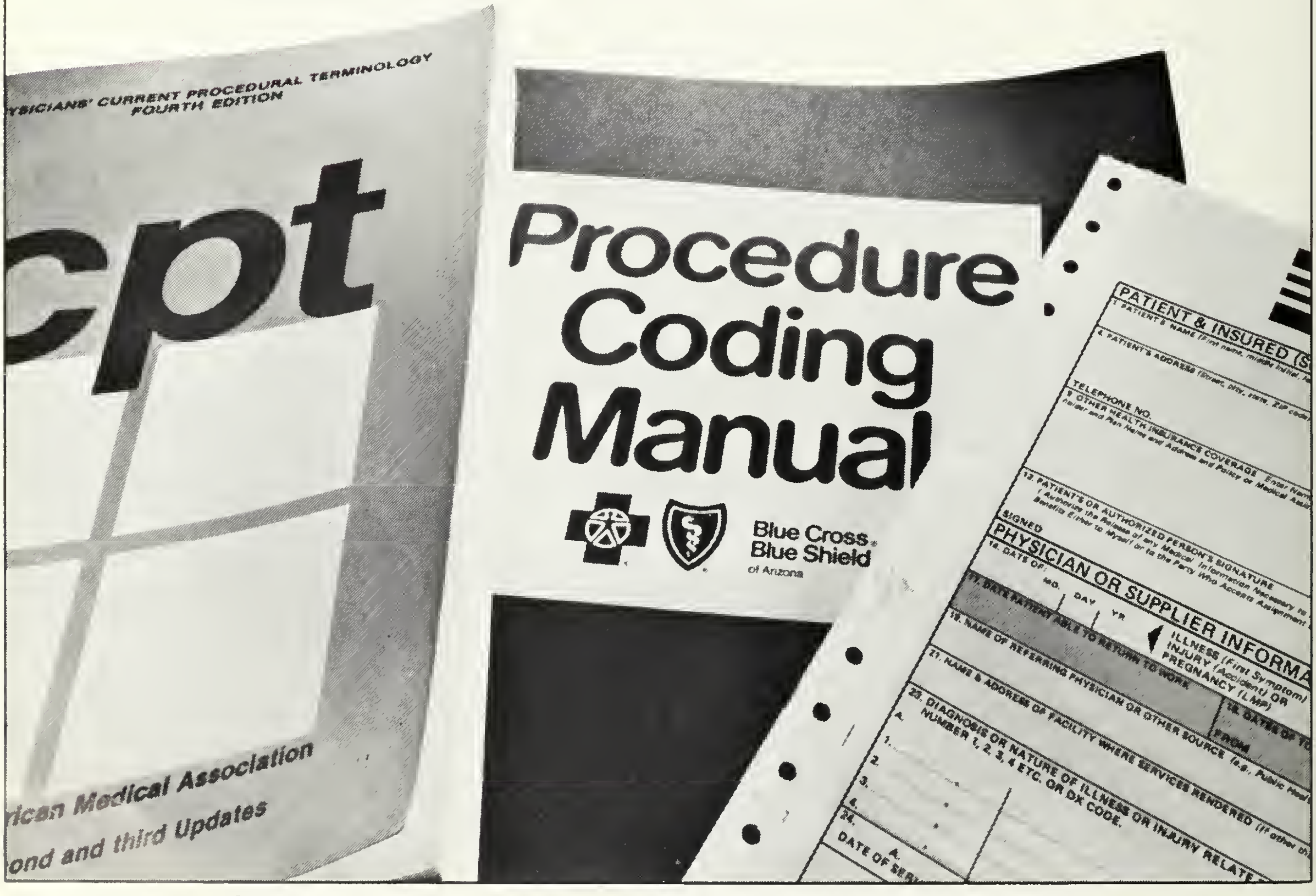
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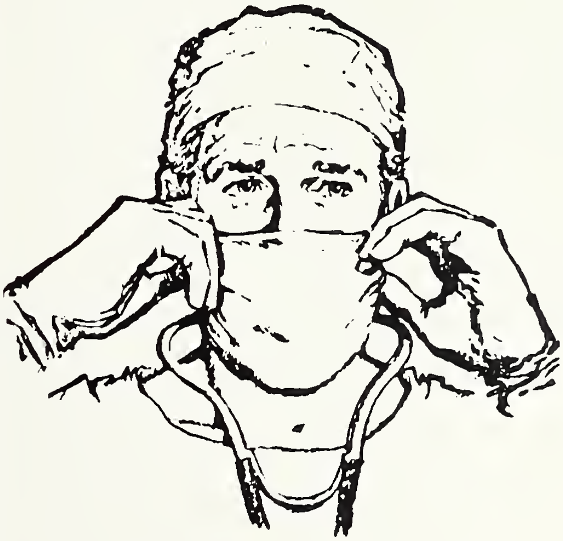

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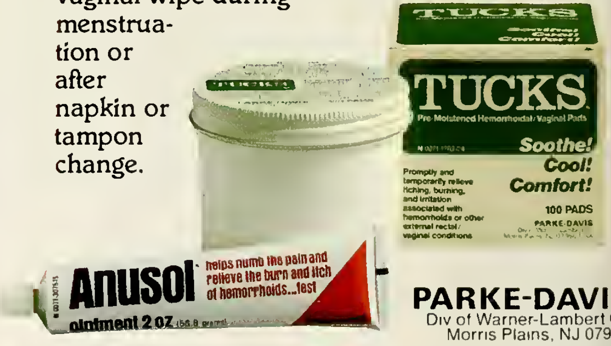
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Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders; athetosis, stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindications: Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

> *Usage in Pregnancy:* Use of minor tranquilizers during first trimester **should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

ORAL Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

INJECTABLE *To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly, taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.*

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, *i.e.*, phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

INJECTABLE Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

Adverse Reactions: Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

INJECTABLE Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia.

In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

Dosage: Individualize for maximum beneficial effect.

ORAL *Adults:* Anxiety disorders, relief of symptoms of anxiety—Valium (diazepam/Roche) tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

Geriatric or debilitated patients: Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

Children: Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

INJECTABLE Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.)

For dosages in infants and children see below; have resuscitative facilities available.

I.M. use: by deep injection into the muscle.

I.V. use: inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children *administer I.V. slowly*; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

Management of Overdosage: Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

How Supplied:

ORAL Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

INJECTABLE Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.

ROCHE ®

Dermatology

Kaposi's Sarcoma in a Homosexual Man in Arizona

Peter J. Casper, M.D.

Editors:
Ronald C. Hansen, M.D.
Robert A. Schwartz, M.D.

Abstract

This paper deals with the first case, to my knowledge, of Kaposi's sarcoma as part of an acquired immunodeficiency syndrome (AIDS) occurring in a homosexual male in the state of Arizona.

Introduction

Kaposi's sarcoma has received a great deal of recent attention.[1] This is due to the profound epidemiological changes which have recently occurred in this disease in the past several years. I would like to describe a recent patient with this condition which may be the first to have occurred in this state.

Comment

Kaposi's sarcoma may be divided into four clinical groups. The clinical course tends to vary significantly in the four groups.

Classic Kaposi's sarcoma was first described by Moritz Kaposi in 1869. It consists of a patch, plague, or nodule varying in color from purple to brown. The affected individuals tend to be either Mediterranean or Jewish in lineage. Individuals in this group tend to have an indolent course with a mean survival of 8 to 13 years. The mean age of occurrence is 63. This type of Kaposi's sarcoma has a reported incidence of .02 to .06/100,000.[2] Other types of Kaposi's sarcoma are the lymphadenopathic type, the exophytic type, and the florid type.

The fourth group is comprised of African blacks particularly those in Uganda and Zaire. Kaposi's sarcoma occurs more frequently accounting for 9% of all malignancies. The patients in this group are younger and the disease tends to be more rampant with early involvement of the lymph nodes and viscera.[3]

Immunosuppressed individuals may be at increased risk of acquiring Kaposi's sarcoma. An increased incidence of Kaposi's sarcoma has been reported in patients with disorders of the immune system including acquired immunodeficiencies, plasma cell dyscrasia, thymoma, polymyositis, systemic lupus erythematosis, and in renal transplant patients receiving immunosuppressive therapy.[4]

Kaposi's sarcoma occurring in homosexual men, interestingly enough, seems to be composed of patients who tend to be young, the average being 36. The disease tends to be aggressive with early involvement of the viscera and lymph nodes. The mortality rate of all recorded patients in this group has been exceedingly high, only 20% have survived more than two years.

These patients also seem to have an underlying acquired immune deficiency syndrome. There is usually an associated infection with pneumocystis carinii. Cytomegalic virus has been recovered from urine, saliva, semen, gastric secretions, and peripheral leukocytes from these patients. High elevations of Anti-CMVIgG antibodies were detected in nine of ten patients and high elevations of Anti-CVMgM in eight of ten patients studied in a recent report from San Francisco.[5]

Amyl nitrate and other alleged aphrodisiacs may be one of several factors contributing to the breakdown in cellular immunity. Amyl nitrate causes an immediate vasodilation of short duration. It is openly used as a sexual recreation "aid" in homosexual bars and baths. A closely related compound isobutyl nitrate, which is also used has been legally marketed in the U.S.A. as a room odorizer. It is also currently under investigation as being a depressor of cell mediated immunity.

From: Affiliated Dermatologists, Ltd., 333 East Virginia, No. 205, Phoenix, Arizona 85004. Reprint requests to Peter J. Casper, M.D., Affiliated Dermatologists, Ltd., 333 East Virginia, No. 205, Phoenix, Arizona 85004.

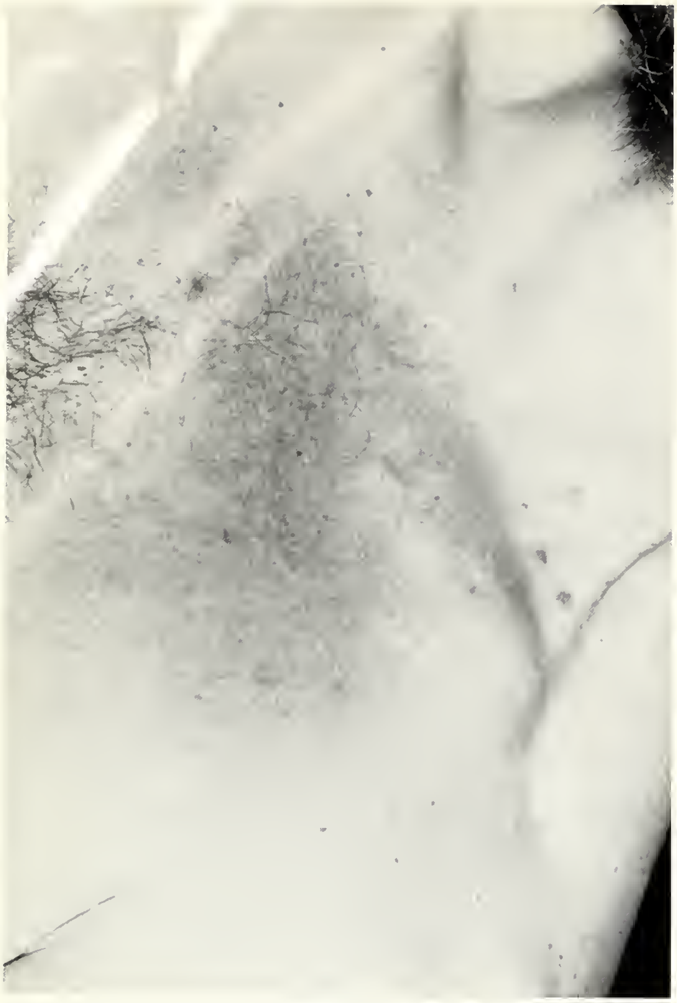

Figure 1
Lesions of Kaposi's sarcoma of anterior chest. Note the linear configuration of one of these lesions at the top of lower arrow.

History

The patient is a 39-year-old homosexual male who developed a "red bump" on his neck in August 1982 which subsequently disappeared. By December 1982 a similar "bump" was present in the right axilla. More recently, he has had a progressive eruption of these lesions over the upper extremities and supraclavicular areas and over the lateral aspect of the right orbit just below the brow.

The patient owns a bar and prior to that had exposure to carcinogens in the form of asbestos exposure years ago. He had hepatitis in 1964. His only known veneral disease has been bouts of gonorrhea years ago. He does use amyl nitrate six days a week. There is no history of other hard drug use.

Clinical Exam

The patient presented lesions which are violacious in nature asymetrically distributed. Some of the lesions were linear in form but most appeared as slightly infiltrated nodules. These lesions were nonpruritic, nonpainful, and nontender. Two cutaneous 4 mm punch biopsies were obtained from these lesions.

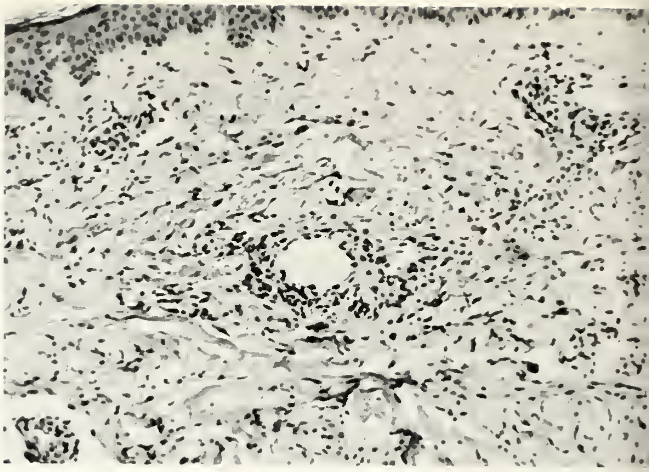

Figure 2
Low power magnification of the "jagged spaces Characteristic of patch stage Kaposi's sarcoma.

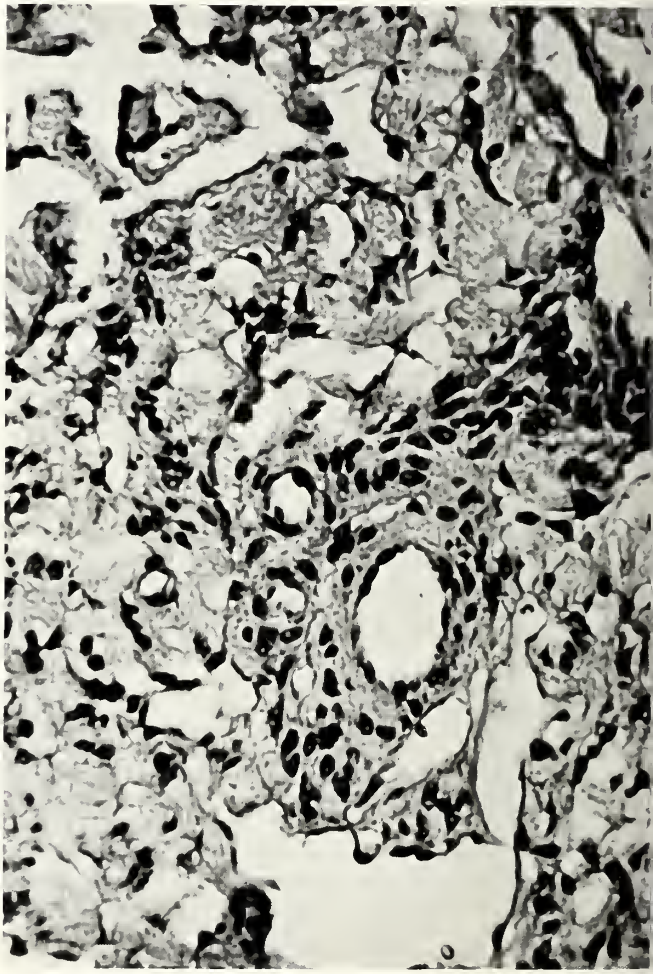

Figure 3
High power magnification. The "jagged spaces" of Kaposi sarcoma around a preexisting vessel.

ermatopathology

Characteristic findings of patch stage Kaposi's rcoma were noted. These consisted of "jagged" spaces the mid and upper dermis. The spaces appear to be ied by hyperchromatic nuclei. They are characteristic that they surround preexisting vessels. A plasma cell filtrate was also noted in the perivascular area.

iysical Exam

A thorough physical examination failed to reveal any gnificant positive findings other than the aforeentioned skin lesions. Esophagogastroduodenoscopy id colonscopy failed to reveal any internal lesions of e gastrointestinal tract. There was no significant mph node, liver, or spleen involvement on examation.

Studies of this man's cell mediated immunity showed a versal of T4 to T8 subpopulations consistent with an creased number of suppressor T cells as opposed to elper T cells. In addition he had a positive hepatitis B ore antibody.

omment

It is imperative that a high index of suspicion be onsidered in the diagnostic approach of these patients that early therapy for the Kaposi's sarcoma may be aximized, and any associated serious infections eated.

cknowledgements

Dr. D. Hood Franks (oncology) and Dr. Michael tman (gastroenterology) helped provide care for the atient. Dr. A. Bernard Ackerman confirmed the dermapathological findings.

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Medical Genetics

At Increased Risk: Neural Tube Defect Relatives

Frederick Hecht, M.D.
Barbara K. Hecht, Ph.D.
Richard C. Wagner, M.S.
Susan C. Szucs, M.T.

Editor:
Frederick Hecht, M.D.

Abstract

Neural tube defects (NTD) such as anencephaly and spina bifida can be detected before birth, but often are not, although the means of detection are available. To delineate a high-risk population, the value of family history was examined. For first degree relatives, the risk is 26-fold higher than the general population; for second degree relatives, the risk is 4-fold; for third degree relatives, the risk is 1.4-fold. The risk of cleft lip/palate is increased with NTD. And, likewise, the NTD risk is elevated by a history of cleft lip/palate. With family history, one can identify at least 23,000 people in the Phoenix-metro area and 42,000 people in Arizona who are at increased NTD risk, because of a NTD in their family. For this risk group, maternal serum alphafetoprotein (AFP) testing is valuable followed by level II ultrasound, as indicated, and amniocentesis for AFP. This focuses NTD detection at least cost upon those at increased risk for NTD. An alternate approach, particularly suited to very high risk patients, is to go directly to ultrasound plus amniocentesis to optimize the chances of detecting a NTD.

From: The Genetics Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281. Supported in part through funds provided by the U.S. Department of Health and Human Services, Bureau of Health Care Delivery and Assistance, for an Arizona Genetics Program; and by the Arizona State Legislature via the Center for Disease Control, Arizona Department of Health Services for Investigation of Birth Defects in Arizona. Reprint requests to Frederick Hecht, M.D., The Genetics Center of Southwest Biomedical Research Institute, 123 East University Drive, Tempe, Arizona 85281.

Table 1
Absolute Risks of Neural Tube Defects in Relatives

Relation to Probands*	No. of Persons Studied	Persons Affected** No.	%
First degree relatives	283	9	3.2%
Second degree relatives	1,132	5	0.5%
Third degree relatives	4,175	7	0.17%
General population**			0.12%

* *Probands (index cases) had neural tube defects: anencephaly, spina bifida, (meningomyelocele), etc.*
** *Persons affected similarly had neural tube defects.*
*** *Reported by the Birth Defects Monitoring Program (U.S.).*

Neural tube defects are among the most common congenital malformations, occurring with a prevalence of 0.12% (1 in 833) births in the general population, according to the U.S. Birth Defects Monitoring Program. Neural tube defects in this context include anencephaly and spina bifida cystica (meningomyelocele).

Once parents have suffered the occurrence of an anencephalic conception, they are at increased risk with each future pregnancy, not only for anencephaly, but also for spina bifida. The converse is likewise true, since both defects are genetically and embryologically related.

The points of this article are that 1) all first, second, and third degree relatives of a child with a neural tube defect are at increased risk for a neural tube defect (and at increased risk for a cleft lip/palate); and 2) prenatal genetic counseling and appropriate sequential diagnostic tests should be provided to them.

First, Second, and Third Degree Relatives of Persons with Neural Tube Defects

First degree relatives of an individual with a neural tube defect (NTD) consist of the individual's parents and sibs. Since the parents generally do not have a NTD, the first degree relatives at risk for a NTD are usually the brothers and sisters of the affected individual.

Second degree relatives of a NTD person are that person's uncles, aunts, nephews, and nieces, i.e., the parents' brothers and sisters and the affected person's brothers' and sisters' children.

Third degree relatives of a NTD individual include, particularly for purposes of genetic counseling, first cousins and also children of nephews and nieces.

The coefficients of relationship and other details about these levels of relationship with the numbers of at risk persons for purposes of genetic counseling have been given.[1]

Risks for First, Second, and Third Degree Relatives for Neural Tube Defects

Data were gathered in anencephaly and spina bifida by sending a questionnaire to families known to contain an affected person. The spina bifida index group was obtained through spina bifida clinics, parent groups and genetics clinics. The anencephaly index group was similarly obtained via genetics clinics throughout th United States.[2]

The questionnaire asked two matters of information

1. The total number of family members in eac category (first, second, and third degree relatives); an
2. A notation regarding any affected family member with a NTD other than the index case. The results ar presented in Tables 1 and 2.

First degree relatives had a 3.2% risk of NTD, 26.7-fol higher than the general population.

Second degree relatives had a 0.5% risk of a NTD, 4.2 fold higher than the general population.

Third degree relatives had a 0.17% risk, 1.4-fold highe than the general population.

Neural Tube Defects and Cleft Lip/Palate: Connecte Risks

The neural tube is open in early embryonic development and closes by 28 days of embryonic life Anencephaly represents a defect in closure of the neura tube at the anterior (cephalad) portion. Meningomyelocele represents a defect in closure of the neura tube at the posterior (caudad) portion.

Anencephaly and meningomyelocele are midlin defects. So are cleft lip and palate. If a person i predisposed to NTD, are they predisposed additionall to cleft lip/palate?

In a set of six surveys, there were 4,222 index patient or sibs with NTD.[2] Of the 4,222 NTD individuals, twelv (0.28%) had cleft lip/palate, as compared to a genera population expectation of 0.15%. The added risk of cleft lip/palate is close to 2-fold normal.

Midline closure defects are related as a group fo genetic counseling. When counseling families c children with NTD, one should mention that the risk c cleft lip/palate is heightened. Families with clef lip/palate (or other similar closure defects such a tracheoesophageal fistulas or diaphragmatic hernias should likewise be informed that they are at elevate risk for NTD.

Expansion of NTD Risks: Public Health Consideration

Family: Once a NTD occurs within a family, th number of relatives who are at risk for NTD depend upon the family size. If the family has an average sibship

Table 2
Relative Risks for Neural Tube Defects in Relatives

roup	Neural Tube Defect Risk %	1 in ____	Relative Increased Risk*
rst degree relatives	3.2%	1 in 31	26.7-fold
cond degree relatives	0.5%	1 in 200	4.2-fold
ird degree relatives	0.17%	1 in 588	1.4-fold
eneral population	0.12%	1 in 833	

Risk relative to risk for the general population.

ze of 2.0, 2.5, or 3.0 children per couple, this puts 13, 25 r 42 persons, respectively, at risk.[1] (Table 3).

General Population: Since the general population cidence at birth for NTD is 0.12% in the U.S., the resence of 13, 25 or 42 persons at NTD risk in a family fects 0.12% times each of these numbers of persons: 56%, 3.00% or 5.04%, respectively, of the general opulation. (Table 3).

Phoenix-Metro Area: The Phoenix-metro area has least 1.5 million people. Thus, 1.56% of this population epresents 23,400 people at increased risk for NTD due the occurrence of a NTD within their family. (Table 3).

Arizona: According to the 1980 census, there were 7 million people in Arizona. With a small family size of 0 children per couple, 1.56% of the general population at risk for NTD, 42,000 people. (Table 3).

Larger Families: The more children there are in a mily, the larger the number of persons at risk for a NTD ue to the occurrence of one NTD within the family. able 3).

ublic Health Strategy

In screening for a birth defect, there are a number of rategies. One strategy is to screen everyone in the opulation. This is done, for example, with phen- ketonuria (PKU). All newborns are tested for PKU. The dvantage of this strategy is that it can detect every case. ne disadvantage is cost.

A second strategy is to delineate a high-risk group ithin the population and screen it. This is done with Tay-Sachs disease, since it is one hundred (100) times more prevalent among Jewish than non-Jewish children. The advantage of this strategy is economy. The disadvantage is that certain cases of the disease will not be detected.

One strategy with NTD is therefore to test every pregnancy at 16 to 19 weeks' gestation by maternal serum alpha-fetoprotein (AFP). If AFP is elevated, it is repeated. If AFP is again high, the woman is offered level II ultrasound and amniocentesis. The extraordinary advantage of this strategy is that it will detect many cases of NTD, even those without a prior family history. In Arizona with about 50,000 deliveries per year, the cost at $15 per AFP would be $750,000.

The second strategy with NTD—to delineate a high-risk group—can be based on family history. Since the majority of families have no history of NTD, they can be spared AFP testing in pregnancy. The advantages of this strategy are cost-saving and efficiency. The disadvantage is that cases of NTD with no prior family history will be missed.

The efficiency of selective high-risk screening strategy can be increased by including other high-risk groups. For example, pregnant women with diabetes, since diabetic women have an elevated NTD risk, should also be screened by serum AFP. For another example, women who have consumed considerable alcohol in pregnancy might also be tested for serum AFP, since they may also have an elevated NTD risk.

Table 3
Expansion of Risks for Neural Tube Defects to Relatives

hip *	Relatives**	At Risk General Population***	Phoenix****	Arizona*****
	13	1.56% (1 in 64 persons)	23,400	42,407
	25	3.00% (1 in 33 persons)	45,000	81,553
	42	5.04% (1 in 20 persons)	75,600	137,008

* *Number of children per couple.*
** *See reference 1.*
** *Based on general population incidence at birth of 1 in 833 (0.12%) for neural tube defects.*
** *Based on a Phoenix-metro population of 1.5 million people.*
** *Based on the 1980 census of Arizona with 2,718,425 people.*

Recommendations in Practice for Screening for NTD

In practice, one might follow this procedure:

1. Obtain a family history on NTD (neural tube defects);
2. If there is a positive family history of NTD, counsel the patient about the risks for a NTD (and cleft lip/palate);
3. Offer maternal serum AFP testing, best done at 16 weeks' gestation;
4. If the maternal serum AFP is elevated, repeat it promptly.
5. If the maternal serum AFP is again high, offer level II ultrasound examination.
6. If the ultrasound examination provides an explanation such as twins, reassure the patient.
7. If the ultrasound examination is consistent with a possible NTD, offer amniocentesis.
8. If the amniotic fluid AFP is high, the probability of a NTD is high.

Very High-Risk Patients

In certain cases where the NTD risk is unusually high, one should best skip serum AFP screening and go directly to ultrasound and amniocentesis. An example would be a woman whose sib died with a NTD and who also had other NTD relatives. Here the risk of NTD is sufficiently high to warrant offering level II ultrasound with amniocentesis in order to detect an open NTD by testing amniotic fluid AFP and acetylcholinesterase.

Management of Relevant Birth Defects

There is no way currently to detect cleft lip consistently (and no way at all to detect cleft palate) before birth. These common clefts, however, are amenable to surgical correction. Children with them should be referred to a multidisciplinary cleft lip and palate team.

A pregnancy with anencephaly will result in a stillbirth or in the birth of a child who will die soon after birth.

The pregnancy with a known meningomyelocele should be delivered by C-section in order to preserve maximal neurologic function. A pediatrician should be present at delivery to confirm the NTD and care for the child. A neurosurgeon should also be alerted prior to birth to evaluate the NTD and do surgery promptly.

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Averaged Evoked Potentials

Colin R. Bamford, M.D.

Editors:
James L. Frey, M.D.
J. Michael Powers, M.D.
Lawrence Z. Stern, M.D.

Introduction

It has been known for many years that altered attention, voluntary motor activity and sensory stimul can all alter the normal electroencephalogram. One o the most pronounced EEG responses noticed was the rhythmic following that was recorded from the occipita lobes in response to photic stimulation.[1] Anothe pronounced response discovered was a centrall located vertex sharp or slow wave following a sound stimulus.[2] The time lapse between the stimuli and the EEG response was barely detectable on the routine EEG but seemed to be grossly constant and reproduceable This awareness of time locking opened the doors to studying averaged evoked potentials which have recently become exciting research tools and clinicall extremely useful.[3]

The averaged evoked response technique was developed to isolate a bioelectric response time-locked to a suitable sensory stimulus from random background activity. This is accomplished by: providing an appropriate stimulus; using that stimulus to trigger a recording sweep; sampling the analog signal and noise; storing each sample in a digital memory; adding each sample and dividing the sum by the number of sweeps stored.

From: The Department of Neurology, University of Arizona, 150 North Campbell Avenue, Tucson, Arizona 85724. Reprint requests to Colin R. Bamford, M.D., Department of Neurology, University o Arizona, 1501 North Campbell Avenue, Tucson, Arizona.

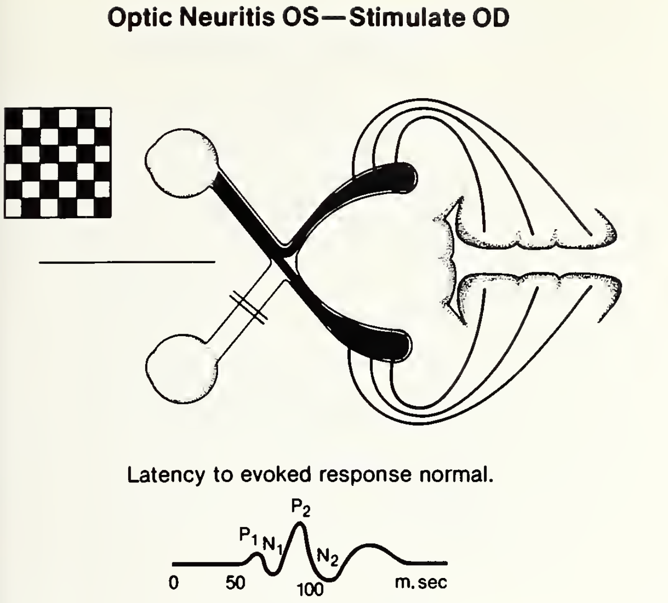

Optic Neuritis OS—Stimulate OD
Latency to evoked response normal.
P1
N1
P2
N2
0
50
100
m.sec

Figure 1
Normal right ocular pattern reversal VER with pathways illustrated.

Clinically useful Evoked Potentials are the pattern-reversal visual (PR-VEP, PR-VER), the flash visual (F-VEP, F-VER), the brainstem auditory evoked response (BAER), and the somatosensory evoked response (SER, SSR, SEP).

The Pattern-Reversal Visual Evoked Response

A checkered pattern of light enters the eye, and specific retinal cells transduce the light into an actively transmitted action potential. The impulse is transmitted via optic nerves, chiasm, tract and radiation to the occipital lobes, and transient electrical fields are generated at the occipital lobes in response to each stimulus. The normal subject has a pattern reversal evoked response that occurs within a predictable range of latencies after the stimulus and falls within a predictable range of amplitudes. If the response is delayed or is of too low an amplitude this signifies an abnormality. In practice the normal range is the mean +/- 2.5 S.D. (Figure 1).

Optic nerve demyelination produces a characteristic delay of the response, with little attenuation[5] (Figure 2). Optic nerve ischemia and optic nerve compression produce attenuation of the response without much delay. Optic nerve degeneration produces a variable delay and attentuation of the response.

Case 1

A 55-year-old white American female was referred by a neurosurgeon who was concerned about the possibility of multiple sclerosis. The patient stated that in 1972 she had some difficulty feeling with the right hand, in 1974 she had noted trouble with her memory, and later in that same year she collapsed and was unable to walk. From 1977 to 1982 she had suffered severe pain in the buttocks and right leg, and in 1982 she felt nervous.

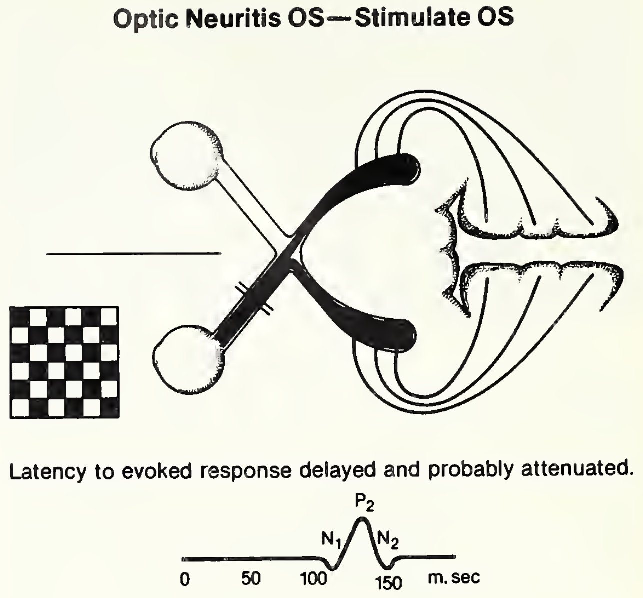

Optic Neuritis OS—Stimulate OS
Latency to evoked response delayed and probably attenuated.
P2
N1
N2
0
50
100
150
m.sec

Figure 2
Abnormally slow and slightly attenuated pattern reversal VER consistent with demyelinative optic neuritis.

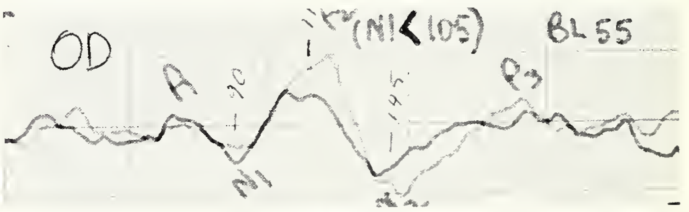


Figure 3
Case 1. Right eye VER shows that the latency to wave P_2 is 116 msec, 11 msec longer than the laboratory's normal range.

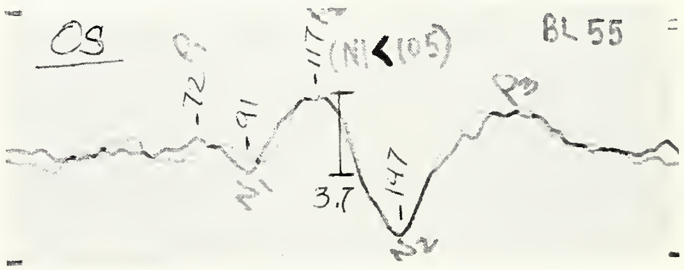


Figure 4
Case I. Left eye VER shows a similar pattern to that produced by the right eye.

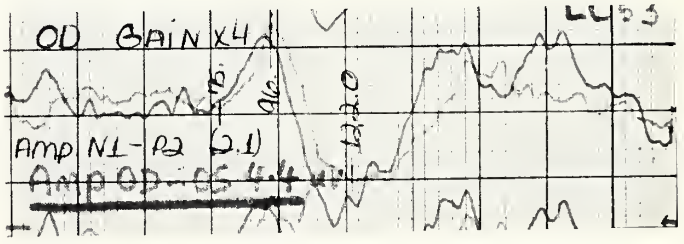


Figure 5
Case 2. Right eye VER shows a normal latency to P_2 of 96 msec, but the amplitude of P_2 is only 2.1μV.

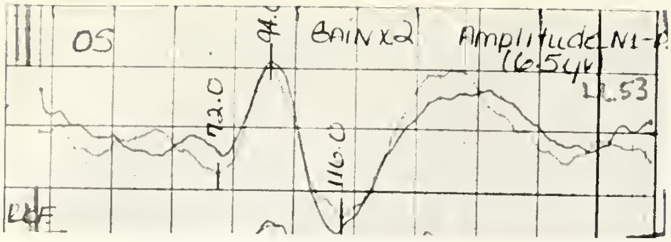


Figure 6
Case 2. Normal VER generated by the left eye with a p^2 amplitude of 6.5 μV. The difference in amplitude between the two eyes is 4.4 μV, which is normal.

(Comment: MS is a disease of white matter tracts, frequently presenting with attacks of blindness, weakness, ataxia, numbness, and double vision. Although memory disturbance, pain and feelings of nervousness may occur, they are nonspecific and more frequently associated with other conditions. Thus in reviewing this patient's history a diagnosis of MS would not be likely.)

On the patient's neurological examination the only findings were a slightly weak right ankle extensor, absence of vibration and decreased light touch over the ankles, mild incoordination and a depressed affect. (Comment: The patient exhibited no objective neurological findings. In assessing the case, one would consider diagnoses of functional disorder and multiple sclerosis. Since most of the patient's symptoms were referable to the spinal cord or brainstem, a PR-VER was selected in an attempt to identify a second lesion clearly physically separated within the CNS in order to demonstrate "dissemination in space," one of the criteria necessary for a diagnosis of MS. As shown in figures 3 and 4, on stimulation of the right and left eyes, the latencies to peak P_2 were 116 msec. and 117 msec. respectively, both significantly prolonged and yet not attenuated, which is rather suggestive of demyelination.

CSF oligoclonal bands were positive lending further support to the diagnosis of MS.

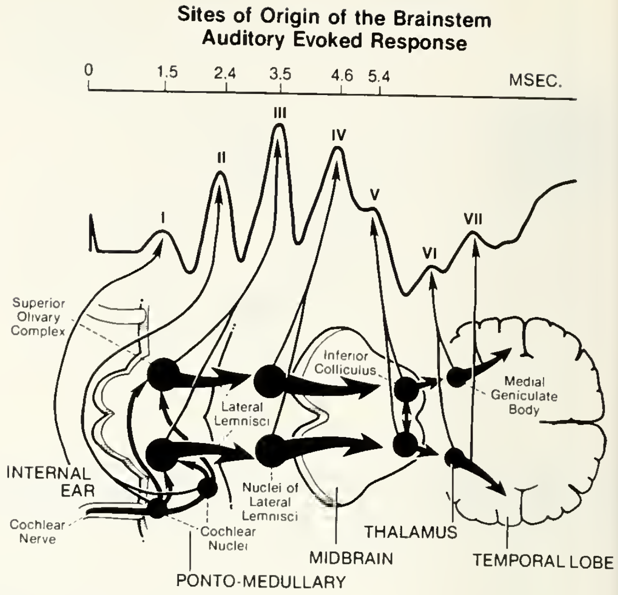
Case 2

A 54-year-old Mexican-American female presented to the Ophthalmology Clinic complaining of a six-month history of blurring of the right eye, three months later the eye's visual acuity worsened, and at the time of evaluation the eye felt "swollen."

On examination of the right eye she had a Marcus-Gunn pupil, a visual acuity of 20/70, a nasal visual field defect, and a swollen optic disk. The left eye was normal.

(Comment: Whereas a common cause of optic neuritis in the younger patient is often demyelinative, in the older individual it is usually ischemic.)

A diagnosis of anterior ischemic optic neuropathy was made and a PR-VER was performed for clinic-neurophysiological correlation. The waveform generated on stimulation of the right eye was attenuated (2.1 uV) as compared to the left eye (6.5 uV) and yet the latencies were normal and symmetrical. (Figures 5 and 6) This pattern of attenuation without prolongation is characteristic of ischemia.



Modified from E. Grass & J. Stockard, Grass Med. Inst.

Figure 7
The BAER

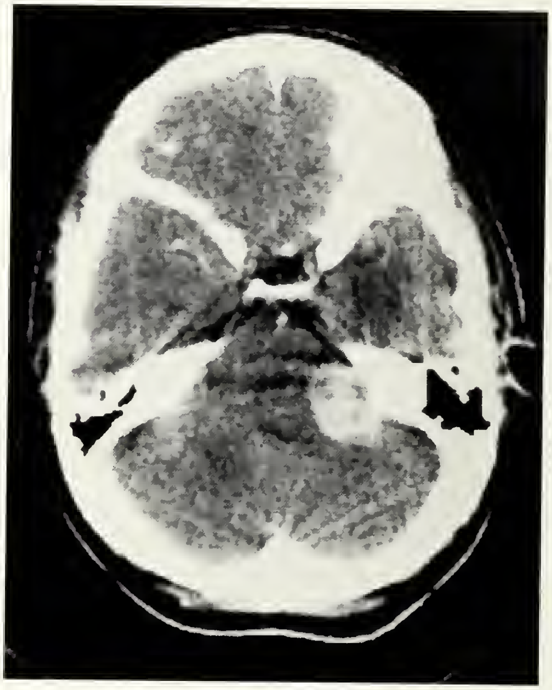


Figure 8
Case 3. Head CT scan showing a cerebello-pontine angle tumor, located near the internal auditory canal, which is accentuated by contrast medium.

The Flash Visual Evoked Response is used when the subject's visual acuity is so poor that the checkered pattern cannot be discerned.

The Brainstem Auditory Evoked Response

In contrast to the pattern reversal visual evoked response which is generated largely by the occipital cortex, the BAER is generated by the ear and brainstem nuclei. A cortical auditory evoked response can be recorded as well, but is of limited clinical value at this time.

In the BAER of the normal subject, using a suitable "click" stimulus we can identify five waves (I-V). Wave I is generated by the cochlea or inner ear; II by the cochlear nucleus; III by the superior olive; IV by the nuclei of the lateral lemniscus and V by the inferior colliculus. (Figure 7).

A prolonged absolute latency to wave I suggests high frequency hearing loss. Prolonged I to III interpeak latency (IPL) suggests a lesion of the acoustic nerve or the medulla. Prolonged III to V interpeak latency suggests a lesion between the pons and the midbrain, and absence of a wave and those rostral to it suggests destruction of the (caudal) wave generator and possibly those rostral to it.

The patho-physiologic correlation of the BAER is as follows: metabolic coma is associated with a normal BAER; multiple sclerosis with reduced amplitude of waves II to V, or increased latency to wave V; acoustic neuroma with absence of waves I to V, or prolonged IPL I-III, or IPL I-V and cerebral death with absence of waves II to V.

To illustrate some of the uses of the BAER in clinical practice we present the following cases.

Case 3

A 37-year-old Mexican-American female presented with a one-year history of intermittent tongue numbness, followed five months later by ringing in the left ear. Her neurological examination was normal except for a diminished response on caloric stimulation of the left ear. A diagnosis of possible cerebello-pontine angle tumor was made, the differential including acoustic neuroma. This diagnosis was based on the progressive development of fifth or seventh, as well as clearly eighth cranial nerve dysfunction. The BAER is the most reliable noninvasive test to document an acoustic neuroma, however, it was not performed for this purpose, instead a head CT scan was done, satisfactorily showing the tumor. (Figure 8). A BAER was performed in this case for the purpose of monitoring brainstem functioning during surgery. On stimulation of the right ear (Figure 9) the BAER was normal, on stimulation of the left ear (Figure 10), there was an obvious delay between peaks I and II representing acoustic nerve conduction slowing; one of the patterns associated with acoustic neuroma.

Case 4

A 72-year-old white American female was brought to the ER after being found in a comatose state. She was noted to have an irregular pulse, confirmed by EKG to be due to atrial fibrillation. The patient's neck was supple, optic disks were normal, the left pupil was 3 mm and unreactive, the right pupil was not assessable due to previous operative changes. The left corneal reflex was decreased, the right normal. She had absent doll's and caloric reflexes. She exhibited decerebrate posturing and ataxic respiration. She had bilateral Babinski's

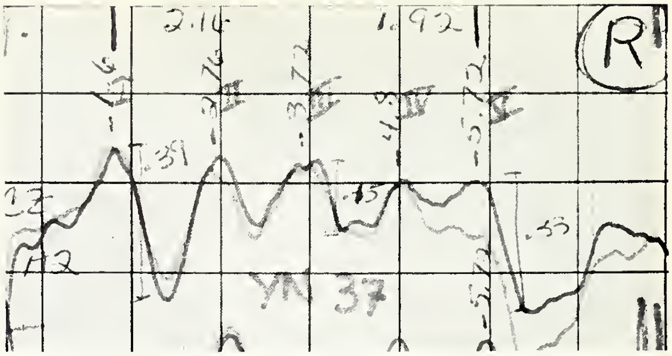


Figure 9
Case 3. Normal BAER on right ear stimulation, clearly showing peaks I to V.

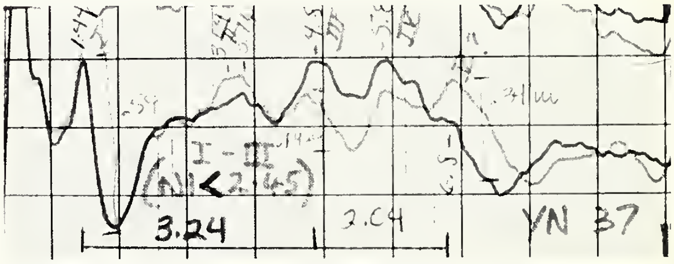


Figure 10
Case 3. Left ear stimulation produced a BAER with an obvious lag between peaks I (cochlea) and II (cochlear nucleus).

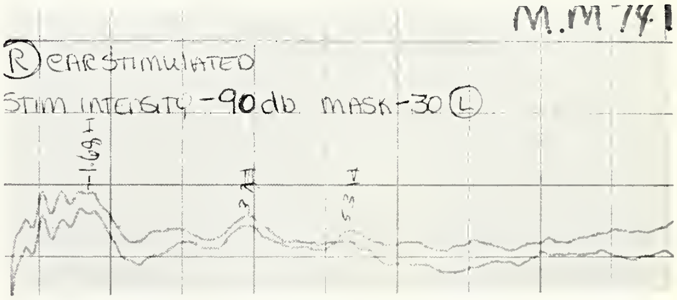


Figure 11
Case 4. Poorly defined right ear BAER, which further deteriorated during the hospitalization.

(Comment: The sudden onset of neurologic deficit suggests a stroke. The presence of atrial fibrillation would suggest a cardiac source of emboli. The site of the neurologic dysfunction would appear to be the brainstem. Midbrain involvement produces mid-position and fixed pupils. Pontine involvement abolishes the caloric response. Medullary involvement produces ataxic respiration.) A diagnosis of embolic vertebro-basilar occlusion was made. A CT scan was performed which was normal (it frequently is normal with brainstem strokes, particularly when the study is

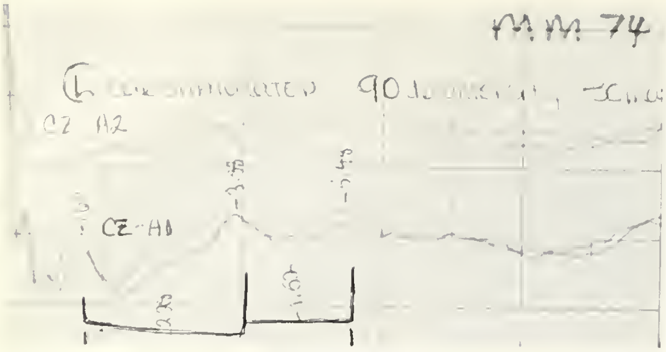


Figure 12
Case 4. Similar response with left ear stimulation.

performed soon after the onset of the stroke). Because of the normal CT scan, the attending physician ordered a BAER to provide independent objective evidence of extensive brainstem destruction for prognostic reasons. Stimulation of both ears produced a fairly well preserved peak I (representing internal ear function) bilaterally, but attenuated brainstem activity (peak II to V) (Figures 11 and 12) without conduction delay which lent support to the clinical diagnosis of infarction.

The Somatosensory Evoked Response

In contrast to the pattern reversal visual evoked response and the brainstem auditory evoked response, the somatosensory evoked response is generated by peripheral nerve, brainstem and somatosensory cortex. Any accessible peripheral nerve can be stimulated but generally the median, ulnar, posterial tibial, common peroneal and pudendal nerves are used. Most laboratories have the greatest experience with the median nerve.

In the median SSR of the normal subject we can identify wave N9 which is generated by the ipsilateral brachial plexus. (The N9 has negative polarity and a mean of 9 msec, hence the terminology.) N14 which is generated by the medulla oblongata, N19 and P23 which are generated by the cortex, and P40 which is generated by association areas. (Figures 13 and 14).

A prolonged absolute latency to wave N9 suggests peripheral median nerve dysfunction. A prolonged interpeak latency (IPL) N9-N14 or absent N14 suggests dorsal nerve root or posterior column dysfunction. A prolonged IPL N14-N19 suggests brainstem and/or subcortical pathway dysfunction, and an absent N19 and P23 suggests profound subcortical conduction block or cortical destruction.

The patho-physiologic Correlation of the Median SSR is as follows: Guillain-Barre' Syndrome is associated with a prolonged latency to N9 and/or a prolonged N9-N14 IPL. Cervical spondylosis is associated with a prolonged N9-N14 IPL or absent N14 wave, and multiple sclerosis with a prolonged N9-N14 IPL, absent N14 wave or prolonged N14 to N19 IPL.

Case 5

An 18-year-old white American male sustained a right brachial plexus injury during a motorcycle accident. On examination he had no movement or sensation of the right arm, and had a right Horner's Syndrome. A median SSR was performed to determine whether there was any subthreshold sensory input from the right arm to the CNS, and a baseline for operative monitoring. The left median SSR was normal (Figure 15) as expected, but the right median SSR showed no CNS potentials. (Figure 16).

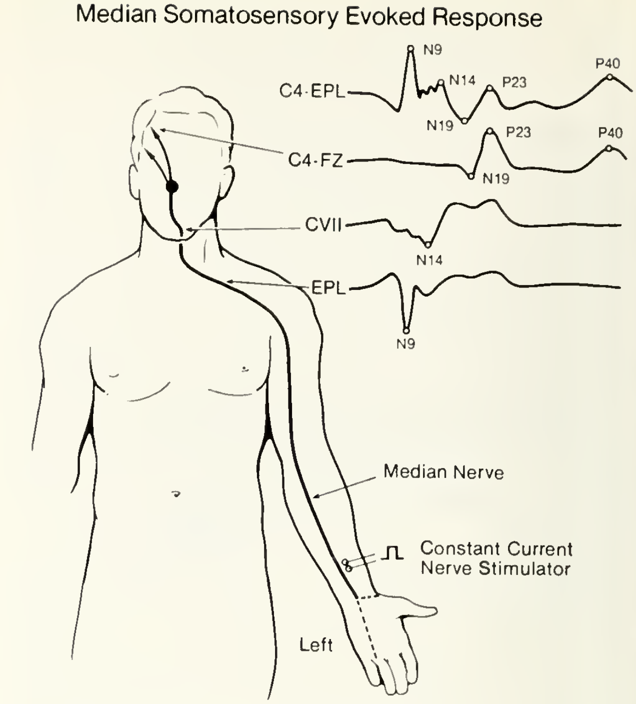

Median Somatosensory Evoked Response
C4-EPL
C4-FZ
CVII
EPL
N9
N14
N19
P23
P40
Median Nerve
Constant Current Nerve Stimulator
Left

Figure 13
The 4 channel median somatosensory evoked response with sensory pathway illustrated.

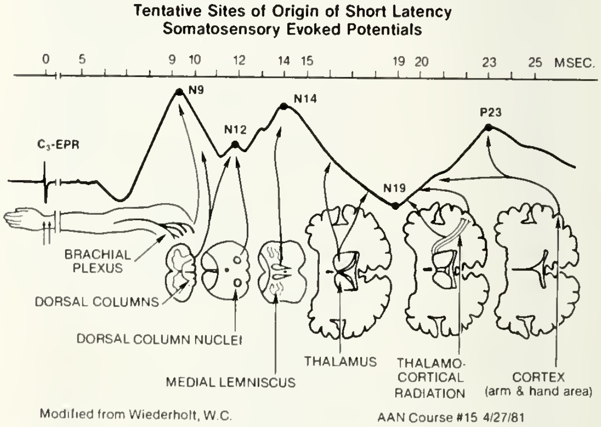


Figure 14
The median SSR.

Case 6

A 45-year-old white American male had a back injury in 1954. In 1975 a laminectomy was performed for atrophy of the right leg and a foot drop. In 1981 he had a laminectomy for bilateral leg pain and numbness.

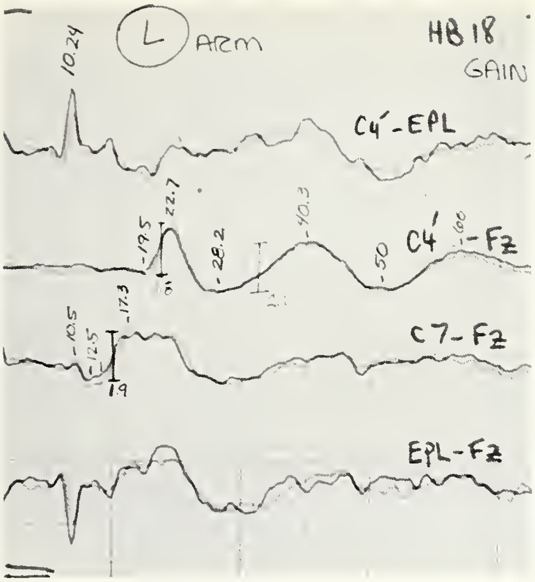


Figure 15
Case 5. Stimulation of the Left Median nerve produced normal brachial plexus, brainstem and cortical responses.

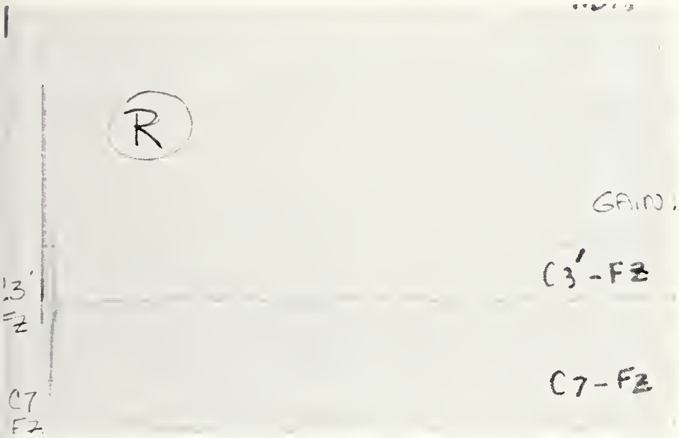


Figure 16
Case 5. This patient with a proven brachial injury exhibits no reproduceable waveforms from the cortex, marked C_3 prime or from the medulla oblongata, marked C_7.

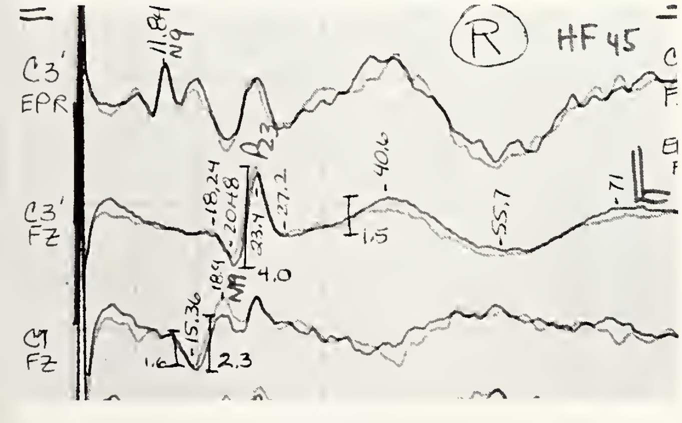


Figure 17
Case 6. The Right Median SSR shows a normal absolute latency to N_{19} and a well defined brainstem response.

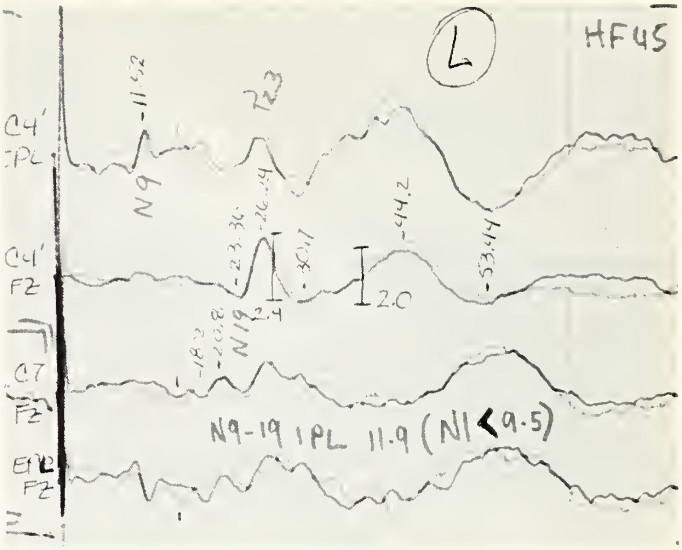


Figure 18
Case 6. The Left Median SSR shows a delayed latency to cortex (N19) and an absent brainstem response (N14).

Immediately thereafter he developed left arm pain and numbness. (Comment: In retrospect, reviewing the available information, it is possible that these procedures were not definitely indicated. The history in fact leaves one very unclear as to the probable diagnosis.) The neurological examination revealed a weak left arm, with decreased DTR's, and loss of pain sensation in the hand. The remainder of the neurological examination was normal. A diagnosis of probable left sixth cervical radiculopathy was made. A myelogram was performed, which was normal. The left arm EMG and Median NCV were normal. The CSF was examined for oligoclonal bands, they were present. (Comment: Oligoclonal bands are suggestive of MS, neurosyphilis as well as other CNS infections. False positives can be expected in about 5% of other neurological disorders, thus it is wise to support the diagnosis of atypical MS with additional supportive tests.) A median SSR was performed on the right median nerve which was normal. (Figure 17). On stimulating the left median nerve, the medullary response (N14) was not well defined, and the cortical response (N19) was abnormally delayed. (Figure 18).

The VER and BAER were normal.

The final symptoms disseminated in time, atypical neurologic signs not disseminated in space, a delayed SSR which was not attenuated and thus suggestive of demyelination, and the presence of oligoclonal bands, resulting in a diagnosis of clinically probable multiple sclerosis.

In summary, the averaged evoked potentials give us a unique opportunity to detect subclinical dysfunction, to allow us to place an objective measurement on the extent of sensory dysfunction, to allow dysfunction to be represented in terms of prolongation of latencies or attenuation of waveform, thus helping to distinguish between different types of pathogenesis, and to detect dysfunction in the face of normal anatomy as demonstrated by CT scanning. Limitations are imposed on the studies by their expense and by failure of patient cooperation. A further limitation on some of the evoked potentials such as lower extremity SSR's and the flash VER, is the broad range of normal values, making some of these tests insensitive.

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Illustrations

Figures 1 and 2

Modified and simplified versions of an illustration by Hart R, and Sherman D. The Diagnosis of MS: *JAMA* 247:498-503, 1982.

Figure 7

Modified and simplified version of illustrations by Grass E and Stockard JJ, Granss Instrument Company and Netter F: Ciba Collection of Medical Illustrations 1—Nervous System. Plate 39.

Figure 14

Modified version of an illustration by Wiederholt W: Somatosensory evoked potentials—General considerations and disease correlations. American Academy of Neurology Course #15, 1981.

Oncology

Management of Stage I Cutaneous Melanoma

Donald H. Berdeaux, M.D.
Thomas E. Moon, Ph.D.
Frank L. Meyskens, Jr., M.D.

Editors:
David S. Alberts, M.D.
Ellen Chase, B.S.

Introduction

Patients with Stage I malignant melanoma (no clinical or histological evidence of nodal involvement or distant metastases at initial diagnosis) may present in a variety of clinical situations ranging from a superficial spreading melanoma of minimal depth (<0.76 mm) on an extremity, to a nodular melanoma, deeply invading to a depth of 6 to 10 mm on the trunk. The management of these patients raises several important issues. How should patients with Stage I cutaneous melanoma of an extremity be managed? What staging work-up is indicated? What is the role in Stage I patients for wide excision of their primary lesion and for radical lymph node dissection?

Points of discussion in this article will include establishing the diagnosis, prognostic factors predicting overall survival as well as metastatic disease, the staging work-up, therapy of the primary lesion, and discussion of multiple points of view on radical lymph node dissection. Adjuvant chemotherapy and immunotherapy will be discussed in a future article.

From: University of Arizona College of Medicine and University of Arizona Cancer Center, 1501 North Campbell Avenue, Tucson 85724. Dr. Berdeaux is a Fellow, Section of Hematology/Oncology. Reprint requests to Donald H. Berdeaux, M.D., Section of Hematology/Oncology, University of Arizona Cancer Center, 1501 North Campbell Avenue, Tucson, Arizona 85724.

Table 1
Prognostic Factors Predicting Survival in Patients with Stage I Melanoma*

Factor	Univariate Analysis Significant	Univariate Analysis Not Significant	Multivariate Analysis Significant	Multivariate Analysis Not Significant
Thickness (Breslow's)	4-7, 9	——	7, 8, 9	——
Level (Clark's)	1, 3-7, 9, 15, 16	——	3, 15	7, 9
Stage	3, 4, 5	——	3, 7	——
Sex (Female)	1, 3-5, 9, 15	7	3, 9, 15, 16	7, 14
Ulceration	4, 7, 15	5	7	15
Age (Younger)	3, 7, 15	5	15	3, 7
Location of Primary Lesion	1, 15	3-5, 8, 9	1, 7, 14, 15	3, 9
Regression	16	7, 8	——	7, 8
Satellite Lesion	3	4, 5	——	——
Histology	3, 9	6, 7	——	3, 7-9

**Investigators indicated by reference number.*

Establishing the Diagnosis

Pathological confirmation of a suspected clinical diagnosis of malignant melanoma must be made prior to future therapeutic decisions. An experienced dermatologist may be needed to help distinguish clinical entities often mistaken for a melanoma, such as a junctional nevus with its surrounding pigmentary changes, a blue nevus, a halo nevus (occasionally confused with a melanoma with an area of regression), a pigmented basal cell carcinoma, or a Spitz nevus, not infrequently seen in children and young adults.[1] If there is any doubt clinically of the diagnosis, an excisional biopsy of the entire lesion should be done,[2] since even experienced dermatologists and medical oncologists may misdiagnose melanoma and related skin lesions.

Prognostic Factors

Predicting Overall Survival

After the diagnosis of malignant melanoma has been confirmed, prognostic information that may assist in predicting the patient's overall survival may be obtained. The depth of invasion of the primary lesion, stage, sex, the presence of ulceration, and the location of the primary lesion are all important prognostic factors (Table 1). Numerous authors[3-11] have shown an increased rate of relapse in Stage I patients resulting in Stage II (regional metastases) and Stage III (distant metastases) melanoma as the depth of invasion is increased as described by Clark[10] (levels I to V) and Breslow[11] (depth in mm) (Table 2). Multivariate analysis indicates that the depth of invasion (thickness) as described by Breslow is more prognostically predictive than Clark's levels,[7-9] because of the wide variation in thickness which may occur within each level. As shown by Balch,[13] patients with nodal metastases (histological Stage II) have a poorer prognosis than do those patients who have no nodal involvement (Stage I). Women tend to have a better prognosis than do men.[3,9,15,16] An ulcerative lesion indicates a poorer prognosis than a nonulcerative primary when thickness is equivalent.[7] Anatomic location of the primary lesion may or may not have significance. Authors reporting its significance claim that patients with lesions on the extremities have the best prognosis, followed by head and neck lesions and then trunk lesions.[1,7,14,15] Histology is much less important than is the thickness of the primary lesions.[3,7-9] Patients with nodular melanoma tend to have a poorer prognosis than do patients with superficial spreading melanoma because it is more likely that a nodular melanoma will be more invasive. On the other hand, a superficial spreading melanoma and a nodular melanoma invading to the same depth have the same prognosis.

Table 2
Malignant Melanoma of the Extremities
Stage I Disease (Clinically Negative Nodes)
Comparison of Clark's Levels and Thickness*

Five Year Survival (%)	Factors Level	Factors Thickness (mm)	Incidence of Microscopic Nodal Metastases (%)
100	II	< 1.0	4
88	III	——	7
83	——	1.0-2.0	6
66	IV	——	25
58	——	2.1-3.0	22
55	——	> 3.0	39
48	——	> 4.0	50
15	V	——	70

**Modified from Kopf*[12]

Predicting Metastatic Disease

Of 358 evaluable patients with Stage I or II malignant melanoma followed at the University of Arizona Cancer Center, 167 had developed metastatic disease after a median follow-up of 56 months. Of nine univariate prognostic factors for predicting metastatic disease, four factors—an increasing level of invasion, the presence of a satellite skin lesion, nodular histology, and Stage II disease—were highly predictive (Table 3A). Three factors of borderline significance included being male, having no family history of melanoma, and being over 50 years old.

However, multivariate analysis of the nine univariate factors and an age/sex interaction revealed three factors to be significant (Table 3B). As level of invasion in Stage I increased, there was an increased frequency of metastatic disease as well as a significantly shorter median time to the development of metastatic disease. Satellite lesions were highly significant and heralded the development of metastatic disease. Patients with a family history of melanoma less commonly developed metastatic disease (2 of 18) as compared with those patients with no family history of melanoma (86 of 202).

Staging Work-Up

A systematic search for evidence of local, regional, and distant metastases as well as other primary melanomas should be accomplished at the time of diagnosis since management varies dramatically if regional or distant metastases are present (Table 4).

History

A patient with a history of multiple pigmented nevi, usually numbering 10 to 100, occurring with an increased frequency on the trunk, buttocks, and lower extremities, usually large in size (>10 mm), and expressed as an autosomal dominant inheritance can be suspected of having B-K mole syndrome[17] or dysplastic nevus syndrome.[18] Since dysplastic nevus syndrome is a histopathological diagnosis, multiple excisional biopsies should be obtained for confirming or refuting the clinical impression. It is important to identify patients with dysplastic nevus syndrome since the management of the patient and his family is quite different. Photomapping of the patient's skin and excision of any suspicious lesions should be accomplished. Multiple excisions may be necessary during the patient's lifetime. Wide surgical excision with 2 to 5 cm margins has not been routinely done. The patient's family should be screened and followed by a dermatologist familiar with the dysplastic nevus syndrome.

Physical Examination

Physical examination should include searching for other sites of primary melanoma since 2.8% of patients with nonfamilial melanoma and 12.3% of patients with familial melanoma have another primary.[19] A search for adenopathy, migratory skin metastases, subcutaneous nodules, satellite lesions, gastrointestinal tract blood loss, and any signs of involvement of the lungs, liver, brain, or bones should be accomplished.

Laboratory Evaluation

Laboratory evaluation should include a complete blood count, liver chemistries, and a chest radiograph. A liver-spleen scan[20] or abdominal ultrasound should be ordered if there is hepatomegaly[21] or an abnormal liver chemistry profile. LDH is the most sensitive liver chemistry test for hepatic metastases with the combination of elevated LDH, SGOT, and alkaline phosphatase being the most specific.[21] Liver, brain, and bone scans are not useful in detecting metastases in asymptomatic patients with Stage I and II disease,[20] but

Table 3
Prognostic Factors used to Predict Time to First Metastases in Stage I & II Melanoma

A. Univariate Prognostic Factors

Factor	Significance
1) Level of Invasion	*$p = 0.0001$
2) Satellite Lesion	+$p < 0.001$
3) Histology	+$p < 0.001$
4) Stage	+$p = 0.03$
5) Sex	+$p = 0.06$
6) Family History of Melanoma	+$p = 0.07$
7) Age	+$p = 0.09$
8) Prior Mole	+$p = 0.71$
9) Location of Primary	*$p = 1.0$

B. Multivariate Analysis

Factor	Significance
1) Level of Invasion	$p = 0.001$
2) Satellite Lesion	$p = 0.005$
3) Family History of Melanoma	$p = 0.046$
All other Seven Factors not Statistically Significant	($p > 0.05$)

**Breslow +Wilcoxon*

Table 4
Staging Work-up*

History:	? Dysplastic Nevus Syndrome
Physical Exam:	Multiple primaries (4%-5%) Adenopathy Distant metastases (skin, nodes, gastrointestinal tract, lung, brain, bone)
Laboratory:	CBC[1] Chest x-ray[1] Liver function tests (LDH most sensitive/LDH, SGOT, and alkaline phosphatase most specific)[2,3] Liver/spleen scan if elevated liver function tests or LDH[4] Specialized test only if symptomatic[4]

**Modified from DeVita[22]*
1. Meyer et al.;[28] 2. Einhorn et al.;[21] 3. Garg et al.;[29]
4. Thomas et al.;[20]

Table 5
Stage I Melanoma

Thickness	Survival (8 yrs.)	Comment
< 0.85mm	99%	
0.85-1.69mm	93%	BANS* responsible for mets
1.70-3.64mm	69%	All groups not benefited by radical lymph node dissection
≥ 3.65mm	38%	

BANS = Upper* **Back, *Posterolateral* **Arm**, *Posterior and lateral* **Neck**, *and Posterior* **Scalp**. *Adapted from Day[26]* may be valuable as a baseline. The role of computerized tomographic scans requires further definition.[22]

Treatment of the Primary Lesion

If the primary melanoma is a very thin melanoma with a depth of invasion of 0.76 mm or less, local excision is curative with no local recurrences noted by Breslow[23] (0.5 to 3 cm margins) or by Balch[24] (1 to 5 cm margins). If the primary lesion is 0.76 mm or more in depth, a 3 to 5 cm wide excision with split thickness skin graft has resulted in a 2% to 7% local recurrence rate.[22]

Recently, Day[25] has evaluated 203 patients with Stage I melanoma with primary tumors 0.76 to 1.69 mm thick. Of 12 deaths, 11 occurred in 67 patients with primary tumors located in the upper **b**ack, posterolateral **a**rm, posterior and lateral **n**eck, and posterior **s**calp (BANS) (Table 5). Day[26] noted that Stage I non-BANS melanomas 0.85 to 1.69 mm thick metastasized no more frequently than Stage I BANS lesions less than 0.85 mm thick and recommends only a 1.5 cm excisional margin. A trial to study node dissection for high-risk patients with BANS lesions from 0.85 to 1.69 mm thick is suggested. Compromise of margins may be needed to preserve important structures such as vessels and nerves or structures on the face or other difficult anatomic sites.

Radical Lymph Node Dissection

Almost all authors agree that radical lymph node dissection is not required in patients with primary melanoma lesions less than 0.76 mm since these patients are cured with excision alone. A radical lymph node dissection is also not indicated in those patients with lesions greater than 4.0 mm since most already have distant micrometastatic disease.

However, authors do not agree on the role of lymph node dissection in patients with lesions of an intermediate depth of 0.76 to 4.00 mm. Balch et al.[24] did a retrospective analysis of 173 patients with Stage I melanoma. They noted that of 56 patients with a melanoma thickness of 1.50 to 3.99 mm, the 18 who had a wide local excision alone had a 75% five-year incidence of distant metastases versus a 15% five-year incidence of distant metastases in 38 patients who had both a wide local excision and a radical node dissection. Patients whose lesions were less than 1.5 mm or greater than 4.0 mm did not benefit from radical node dissection.

It should also be noted that if the lesion of intermediate depth occurs on the trunk, it may not be clear as to which lymphatic drainage may supply the lesion, i.e., which axilla or groin. Some authors would proceed with a node dissection of the site nearest the lesion while others would wait for development of nodal disease.

Veronesi et al.[27] reported a prospective randomized trial of lymph node dissection versus no lymph node dissection in 553 patients with Stage I melanoma of the limbs. Of 263 patients with a documented Clark's level, 178 had level IV lesions and the 5-year survival was slightly better for those patients having both excision and node dissection (82% versus 75%).

Table 6
Treatment of Stage I Melanoma

Thickness		Surgical Treatment	
Non BANS	BANS	Wide Excision	Node Dissection
$\leq$ 1.69mm	$\leq$ 0.85mm	1.5cm Margin	No$^{1-3}$
1.7-3.00mm	0.86-3.99mm	3.0cm Margin	No$^{1+,2*}$ Yes^{3}
$>$ 4.0mm		3.0cm Margin	No^{1,2*,3}

+Patients with BANS lesions 0.85-1.70mm in thickness may benefit from lymph node dissection.

*No lymph node dissection if the patient with an extremity lesion can be followed closely (monthly) unless lymph nodes become clinically positive (24% of patients).

1. *Day* et a*l*.;[26] 2. *Veronesi* et a*l*.;[9] 3. *Balch* et a*l*.;[24]

The nonsignificant p value of 0.15 should be evaluated in the light that this represents only half of the patient population and that there was a wide range of tumor thickness within both level III and level IV lesions. When survival by tumor thickness was analyzed in 309 patients, there was no evidence of benefit from lymph node dissection over wide excision alone (p = 0.36). Occurrence of lymph node involvement at the time of elective lymph node dissection was 20%. Of those patients who had no node dissection and were followed at monthly intervals, only 24% developed clinical evidence of metastases and required a lymph node dissection. The survival for patients with prophylactic node dissection was not significantly different from that for patients requiring a node dissection at a later date. The authors concluded that delayed dissection in patients with Stage I melanoma of the limbs was as effective in the control of the disease as immediate dissection.

The "wait and see" policy avoids unnecessary morbidity in the 75% of patients with negative histologic findings in the regional nodes. Delayed dissection is advisable as long as the patient can be kept under strict clinical surveillance. If the patient cannot receive close follow-up, node dissection of the regional nodal draining basin should be considered.

A summary of accepted approaches to lymph node dissection is shown in Table 6. A patient with Stage I melanoma with a non-BANS lesion < 1.70 mm thick or a BANS lesion < 0.85 mm thick does not need a node dissection, since these patients are cured by a wide excision. The wide excision in these cases may be minimal, i.e., 1.5 cm margins. Patients with Stage I melanoma with a lesion greater than 4.0 mm thick should have a wide excision of 3 cm. No node dissection is warranted prophylactically since micrometastatic disease will not be controlled. Controversy continues as to proper surgical treatment for the patients with lesions of intermediate thickness of 1.50 to 3.99 mm (non-BANS) or 0.85 to 3.99 mm (BANS). Day[26] recommends a trial of prophylactic node dissection for patients with BANS lesions 0.85 to 1.70 mm thick and no dissection for all lesions 1.70 to 3.99 mm thick. Balch[24] recommends prophylactic node dissection for patients with lesions

1.60 to 3.99 mm thick. Veronesi[27] recommends no prophylactic node dissection in patients with melanomas involving an extremity unless the patient cannot have close follow-up, but "watchful waiting" with node dissection should clinical Stage II occur. Further clinical research is warranted in evaluating the possible benefit from radical lymph node dissection in patients with truncal lesions 1.6 to 3.99 mm thick or with BANS lesions 0.85 to 1.70 mm thick.

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Urology

Penile Prosthesis Surgery

William W. Bohnert, M.D.
Clyde W. Kurtz, M.D.
Sherwood E. Denton, M.D.

Impotence has been defined as the inability to obtain r maintain an erection satisfactory for sexual interourse. The ability to ejaculate or experience orgasm are ften uninvolved. Impotence is now recognized as a eatable illness. It is important, therefore, that mpotence be distinguished from other conditions vhich prevent satisfactory coitus, such as decreased bido, advanced Peyronie's disease, and a host of ehavioral dysfunctions, such as premature ejaculation, demand factor," and interaction between partners.

The surgical treatment of erectile impotence has ecome relatively common in urological practice since ne introduction of silicone material in the early 1970's. ome 18,000 such operations have been performed to ate.[1]

Small, Carrion, and Gordon[2] recorded in 1975 their xperience with the paired silicone prosthesis, which is urrently accepted as the prototype for all paired oninflatable penile implants. The Finney[3] hinged ilicone penile implant followed in 1977.

In 1973 Scott et al.[4] reported their experience with the nflatable penile prosthesis prototypes. Numerous other urgeons have reported their experience over the years sing this device.[5,6]

In May of 1979 Jonas and Jacobi[7] reported their experience using a silicone penile prosthesis in which silver wires are imbedded to allow for voluntary bending of the penis for urination and resting position and for straightening for intercourse.

The three types of semi-rigid prosthesis currently used (Small-Carrion, Finney, and Jonas) and the inflatable prosthesis (Scott) each has its advantages and disadvantages. Enthusiasm for a particular type is largely individual, and spouse acceptability has been uniformly satisfactory regardless of the type implanted.

The purpose of this report is to present our experience in the use of penile prosthesis as a surgical correction for erectile impotence in sixty patients treated since 1979.

Method

Preoperatively all patients undergo a thorough history and physical exam. The initial interview is often crucial in making a diagnosis as well as shaping the information material in a fashion allowing the patient to make an informed decision. "Hands on" examination of the various prostheses have been helpful for patients to gain some insight into realistic expectations regarding the procedure. Very often the interview will bring forth the history of prior surgeries or courses of treatment, which promptly established the etiology for impotence. A prior history of drug use, specifically antihypertensive agents, estrogen, narcotics, antidepressants, and alcohol, will require further assessment by the examiner. A history of loss of libido may be viewed as a contraindication for surgical correction until further clarified. Often this is related to hypogonadism[7] and determination of serum levels of prolactin and testosterone are warranted. A history of diabetes is significant since more than half of the men with diabetes are impotent.[8]

Examination should include particular assessment of neurological and vascular status as well as genital and prostatic evaluations.

For those patients desiring surgical correction, and in whom an obvious etiology has not been established (i.e., prior radical surgery, trauma, or prostatic irradiation) further evaluation via nocturnal penile tumescence (NPT) and psychological assessment with Minnesota Multphasic Personality Inventory (MMPI) have been done. Such testing continues to be advocated by Scott and Furlow, and aside from its use for screening purposes may prove helpful for legal and insurance purposes. Many carriers will not reimburse the cost of surgical treatment for psychological impotence.

The principle underlying the NPT is that all normal men (including those with psychological impotence) have periodic erections during the REM sleep state. Absence of these erections suggest organic cause.[9] Problems exist with this method and its interpretation, but we have found it a helpful screening process. Expense has precluded our use of hospital sleep-state laboratory facilities for the usual case.

Accepting an estimated 20% inaccuracy, we have found the test easily done in the patient's home

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rom: Urology Associates, Ltd., 3411 North Fifth Avenue, Phoenix, rizona 85013. Reprint requests to William W. Bohnert, M.D., Urology ssociates, Ltd., 3411 North Fifth Avenue, Phoenix, Arizona 85013.

environment and generally acceptable to interpretation. The most recent experience with tumescent monitoring via "Stamp Test" or use of The Snap-Gauge suggest excellent correlation with NPT and general acceptance by implanting surgeons.

Psychological evaluation and MMPI testing of these patients is a valuable aid to illuminate factors contributing to their impotence. Even patients with organic impotence may have psychological problems which must be considered. The results are helpful not only in assessing the cause of impotence, but in evaluating the patient's motivation and identifying those patients at risk from adverse reaction to treatment. The consultations have been of great value in helping patients develop a realistic expectation from therapy.

Upon completion of the medical exam, NPT study, psychological interview, and MMPI testing the patient is again interviewed, preferably with his spouse or sexual partner, for final review and discussion of the surgical procedure, choice of prosthesis, and cost factors.

Materials

Since May 1979, sixty patients in our practice have had insertion of penile prosthesis. Thirty have chosen the Scott inflatable prosthesis, and thirty have chosen the three different types of semi-rigid type, i.e., Small-Carrion, Finney Flexi-rod, or the Jonas prosthesis.

Etiology

All patients were considered to have secondary impotence due to the causes listed in Table 1. One patient was felt to have psychogenic impotence. The large number of unknown patients listed were felt to be due to arteriosclerosis clinically, but this was not proven by diagnostic studies. They all had flat or significantly altered NPT studies. All were cleared by psychological interview and MMPI testing as being good candidates for surgical correction as definitive therapy for their erectile impotence.

The ages of patients varied, but the majority (40%) are between 60 and 69 years of age. (Table 2) Another 25% of patients were in the 50 to 59 year age bracket.

Operative Technique

Patients received preoperative antiseptic washes and preoperative antibiotics beginning the morning of surgery. Antibiotics usually consisted of cephalosporin and occasionally an aminoglycoside. In a few patients broad spectrum drugs, i.e., Vibramycin was used. The patients were shaved in the operating room and the operative sites scrubbed with Betadine for 10 to 15 minutes. A 14 French Foley catheter was inserted at the time of surgery and was usually removed within 24 hours. Two types of incisions were used. The penoscrotal approach was preferred for all types of prostheses. This can be extremely important in cases who have received postirradiation changes to the lower abdomen as the morbidity of shaft edema is markedly reduced. The subcoronal approach was used in patient's with Peyronie's disease so the plaque could be excised or incised as need be. The infrapubic approach was used

Types of Semi-Rigid Prostheses in 30 Patients

Small-Carrion	5
Finney Flexirod	10
Jonas	15
	30

Table 1
Etiologies of Impotence

Cause	Prosthesis	
	Inflatable	Semi-Rigid
Radical Surgery and/or Post-irradiation	5	8
Arteriosclerosis	9	4
Diabetes Mellitus	6	5
Peyronie's Disease	1	4
Neurogenic	1	3
Pelvic Fracture	0	2
Psychogenic	0	1
Unknown	8	3
	30	30

Table 2
Age of Implanted Patients

Age	Inflatable	Semi-Rigid
20-29	1	1
30-39	0	5
40-49	2	2
50-59	7	7
60-69	16	12
70-79	4	3
80+	0	0
	30	30

Table 3
Surgical Approach

	Inflatable	Semi-Rigid
Subcoronal	1*	6
Penoscrotal	29*	24
Infrapubic	1	

** One patient with Peyronie's disease had combined subcoronal and penoscrotal incisions.*

Table 4
Complications in 30 Patients with Inflatable Penile Implant

omplication	No.	Disposition
echnical		
ylinder Rupture	7	Replaced
eservoir leak	1	Replaced
ubing leak	1	Replaced
onmechnical		
ube kink	1	Repaired
xtrusion Reservoir	2	Revised
rosion urethra	1	Removed
evision pump osition	1	Revised

two cases for an inflatable prosthesis because of a rior procedure done at another institution. The surcal technique for obtaining exposure of and dilatation f the corpora, measurement of length and selection of roper size prosthesis has been standardized by others. riple antibiotic solution was used for irrigation. After sertion of the prosthesis, the tunica was closed with ontinuous 2-0 Vicryl and the skin closed with a bcuticular 4-0 or 5-0 Vicryl.

The patients were released from the hospital on the rst or second postoperative day, and are seen in the ffice weekly thereafter until they are comfortable. ntibiotics are continued a total of one week postoperatively.

esults

omplications:

The inflatable prosthesis as expected and explained to l patients preoperatively, had a higher instance of omplications (Table 4). Results are similar to other porting urologists.[10] Nine of the thirty patients have xperienced complications (30%), all but one (extrusion reservoir) being of long-term type (occurring longer an six weeks postsurgery). Six patients have had orrective surgery, two patients have surgery pending, d one was reoperated upon elsewhere. Of the six atients requiring reoperation, 14 total procedures have een done, five nonmechanical complications and nine r demonstrated mechanical failures, seven of which ave been cylinder blow-out. Since rear tip extenders ere introduced to reduce cylinder failures, others[11] ave experienced a marked reduction in mechanical ilure rate. Our experience, since using extender tips, ould lend support to this anticipated reduction in echanical failure (2 incidences in the past 20 cases), owever, the life table analysis (reference Table 6) is yet o short for any true comparison. One prosthesis quired removal at 28 months for impending erosion. ll other problems have been satisfactorily corrected, d the patients remain very happy with the functional d cosmetic status of the prosthesis.

Table 5
Complications in 30 Patients with Semi-Rigid Prosthesis

Complication	No.	Disposition
Erosion Urethra	1	Removed

Table 6
Inflatable Prosthesis Aging Chart

Date of Implant	Disposition
7-79	Revision tube 3 mo., replacement cylinder blow-out 18 mo., impending erosion 28 mo. removed
1-80	Cylinder blow-out 14 mo., leak reservoir 25 mo., leak tubing 26 mo.
1-80	Intact
6-80	Failure—24 mo. Surg. pending
7-80	Failure—30 mo. Surg. pending
9-80	Replacement 7 mo., cylinder blow-out 7 mo.—replacement
9-30	Intact
10-80	Intact
12-80	Cylinder blow-out 12 mo. and 22 mo. replaced. Revision of bulb 24 mo.
1-81	Intact—Pt. expired 18 mo.
1-81	Intact
1-81	Intact
2-81	Intact
3-81	Intact
3-81	Intact
4-81	Intact
4-81	Intact
5-81	Intact
7-81	Intact
9-81	Intact
11-81	Cylinder blow-out 12 mo. and repeat cylinder blow-out 17 mo., replaced.
6-82	Intact
9-82	Extrusion reservoir 2nd postop. day and revision of pump 4 mo.
11-82	Intact
11-82	Intact
12-82	Intact
2-83	Intact
3-83	Intact

The semi-rigid experience has been uniformly good. ne patient has required removal of the prosthesis condary to perforation into the urethra. The patient and sexual partner acceptance of this prosthesis has been equally as gratifying as in the inflatable device. Two patients, one with a Small-Carrion, and one with a flexirod have had mild concealment problems, however, neither has considered removal of his prosthesis. None of the patients with the Jonas prosthesis have had concealment problems to date.

Discussion

Implantation of penile prosthesis has proved to be a highly satisfactory method of treating impotence. Our own series has thus far been largely limited to patients felt to have organic impotence, but with proper screening and cooperative efforts of clinical psychologists or psychiatrists, selection of patients could extend to those with functional or psychogenic impotence considered refractory to current forms of sex therapy. The patient-partner acceptance has been excellent regardless of the type of prosthesis implanted. Orgasmic and ejaculatory function are not altered by the procedure. Many patients with partial tumescence preoperatively retain this function when semi-rigid type prosthesis is implanted, which is a significant bonus.

The principal advantage of the inflatable prosthesis is its nearly physiological function. When the prosthesis has been implanted, the patient is able to have an erection when desired and also can maintain an inconspicuous flaccid penis at other times. The major disadvantage of the device is its higher cost, and due to mechanical failures of its components, secondary operative procedures may be required. In an increasing cost conscious health care environment, these factors may be significant.

As Krane et al.[13] have emphasized in their report in 1980, the advantages of the semi-rigid prosthesis, specifically the Jonas type, are surgical and mechanical simplicity, lower cost, and shorter operative and hospitalization time. The Jonas prosthesis definitely provides functional and cosmetic results superior to the other semi-rigid prostheses.

Acknowledgement

Special thanks for contributing to the evaluation and treatment of many of our patients to Kimberly Obitz, Ph.D. and Diana Dulaney, M.S.W. at St Joseph's Hospital Mental Health Center.

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Special Articles

Sending Children to College On Pre-Tax Dollars

Tricia N. Salerno

Surely one thing almost every parent looks forward to i seeing his child graduate from college. Conversely, one thing almost every parent dreads is paying for it. There ar several techniques which will accomplish the desired goal more economically. This article will discuss four of the more popular devices. Some of the other devices are: 1) paying a child a salary to work for the parent, so that the parent can take a deduction for the amount paid to the child; and 2) transferring whole life insurance to a trust f the benefit of the child and borrowing the cash surrender value to pay for the child's education. This latter techniqu is especially advantageous in a "super trust" in which the parent would be allowed to deduct any interest paid on t loan at his higher tax bracket.

The techniques suggested in this article achieve the desired goal by using "pre-tax dollars." Pre-tax dollars, as used in this article, is the concept of shifting income from an individual in a higher tax bracket to one in a lower tax bracket, such as from parent to child. This shifting of income is the equivalent of obtaining a tax deduction for the person in the higher tax bracket, ergo the term "pre-tax dollars." The result of the various techniques suggeste in this article is that the child will be taxed on the income earned on the funds at a lower effective rate. For example if a parent places $50,000 into a money-market account earning 10% interest with the intent of using the interest earned to finance his child's college education, at the end of year one the parent will have earned $5,000 interest. If the parent is in a 50% tax bracket, he will pay $2,500 in tax leaving $2,500 for the child's college expenses. If, on the other hand, the parent had used one of the techniques described in this article, the child would pay approximatel $200 in tax (assuming the child has no other income), leaving $4,800 for his college expenses. Since the child is almost always in a lower tax bracket than the parent, thes techniques result in more efficient use of income by reducing the after-tax cost of college education to the parent and increasing the after-tax income available to the child to be used for this purpose.

From: Streich, Lang, Weeks and Cardon, Attorneys at Law, 2100 Fi
Interstate Bank Plaza, P.O. Box 471, Phoenix, Arizona 85001

Jse of the Uniform Gifts to Minors Act

Probably the simplest method of transferring property to minor child, thereby shifting the income to the child's ower tax-bracket, is to make a gift to the child under the Jniform Gifts to Minors Act (hereinafter "UGMA"). The ift is made by the donor's transfer of property to a ustodian for the benefit of the minor. The property must e distributed to the minor when he attains the age of ighteen. The custodian may be the donor, an adult nember of the minor's family, a guardian of the minor or a rust company. The custodian is given broad powers to deal vith the property, including everything from investing and einvesting the property to voting securities which are ustodial property. Generally, the income earned on the ustodial property is taxed to the minor. In addition, in the vent that the minor dies before distribution of the roperty, it will be included in his estate for federal estate ax purposes.

There are two exceptions to these general tax haracteristics. First, if the donor acts as custodian, the roperty will be included in the donor's estate in the event nat he dies before distribution of the custodial property to ne minor. Second, to the extent that the income from the roperty is used to satisfy the donor's legal obligation to upport his child, the income will be taxed to the donor. he question of what types of expenses are included in a arent's support obligation has been of great concern for everal years. If college expenses were considered to be a arent's obligation, none of the techniques described in nis article would achieve its intended result. The position as been taken that in states such as Arizona, where the ge of majority is eighteen, education of a child beyond nat age is not the obligation of the parent. This question of upport obligations also arises in connection with the ayment of pre-college private school expenses. The eneral rule is that such payments are not treated as upport obligations. *See, e.g., Brooke* v. *United States,* 468 . 2d 1155 (9th Cir. 1972).

The primary problem with making a gift under UGMA is nat the custodial arrangement cannot be extended beyond ne donee's majority. Most parents do not feel that their hild is mature or responsible enough to manage a large mount of money at the age of eighteen. For this reason, if ne gift is of a significant amount, one of the other echniques described below should be considered.

hort-Term Trust

A second very popular method of shifting income is to ansfer property to a "short-term trust." A trust is a vehicle hereby the legal title and the beneficial title to property re severed. The donor of the property (in trust terms nown as the "grantor") transfers property to a trustee vho in certain cases may be the grantor himself), for the enefit of a third party (in trust terms, the "beneficiary"). A ort-term trust provides income benefits either for the fetime of the beneficiary, or for a term of at least ten ears. At the termination of the trust period the principal of ne trust reverts to the grantor. This type of trust is used in lace of a complete gift, such as a gift under UGMA, or a ermanent trust, described below, where the owner of the roperty does not desire to part with the property ermanently.

The ordinary income of the trust will, if distributed urrently to, or for the benefit of, the beneficiary, be taxed the beneficiary. In the event that income is accumulated the trust it will be taxed to the trust. Unless the trust ocument provides otherwise, gains from the sale of capital ssets, such as shares of stock, will be held in the trust for istribution to the grantor upon trust termination. The rantor will be taxed on those gains in the year realized, ot in the year distributed.

One problem with the use of a short-term trust is the high gift tax cost of the transfer of property to the trust. The value of the gift for gift tax purposes is equal to the value of an income interest in the property for the period of the trust assuming a six percent rate of return. This value is determined by using the actuarial tables found in the Internal Revenue Code. For example, the amount of the gift for gift tax purposes of a transfer of $100,000 to a ten-year trust would be $44,160. In order to determine the actual tax cost of a transfer to a short-term trust, therefore, the gift tax imposed on the transfer must be compared with the income tax saved by having the income taxed at a lower rate. Because of the six percent gift tax rate, tax savings will only be realized where the assets are earning significantly more than a six percent rate of return. In addition, if the parent is concerned with decreasing his estate for estate tax purposes, he should consider another income-shifting method since 1) the value of the grantor's "reversionary interest" in the trust will be included in his estate in the event of his death before termination, and 2) if he survives the trust term, the trust principal will have automatically reverted to him and will clearly be includible in his estate, thereby increasing his potential estate tax payable.

In deciding which assets to transfer to a short-term trust, the following rules should be followed:

1. Transfer assets which, for a given principal value, earn the greatest amount of taxable income. For example, if $100,000 worth of Stock A earns $10,000 a year, and $100,000 of Stock B earns $20,000 per year, it would be better to transfer Stock B to the short-term trust.
2. Transfer assets which, for a given principal value, have the higher income tax basis. For example, if a parent bought Stock A for $50,000 and Stock B for $80,000, it would be better to transfer Stock B to the short-term trust. Following this rule will tend to lessen the possibility that an individual will be taxed on a capital gain before actually receiving any of the trust property.
3. Do not transfer encumbered assets. Using trust income to pay the principal portion of the encumbrance will be deemed to enhance the corpus of the trust. Therefore, the income will be taxed to the grantor, thus thwarting the intended purpose of the trust.

Permanent Trust

Annual Gift Tax Exclusion

A rudimentary understanding of the annual gift exclusion is necessary to any discussion of permanent trusts. The giving of gifts, as a general rule, is a taxable event. However, the first $10,000 per year of gifts given to each of any number of beneficiaries is excludable in computing the gift tax. In addition, in the event that a husband and wife elect to treat all gifts made by either as being made one-half by each of them, they may give up to $20,000 per year to each donee without paying gift tax. This technique is commonly referred to as gift-splitting.

This exclusion is available, however, only for gifts of a "present interest." For a gift to be considered a present interest, the donee must have the unrestricted right to the immediate use, possession or enjoyment of the asset. Outright gifts and gifts under UGMA will qualify as gifts of present interests eligible for the annual exclusion. Due to the disadvantage of such gifts, however, it is usually desirable for gifts to minors to be made in trust. The short-term trust described above will qualify as a gift of a present interest if either 1) the income of the trust is distributed currently; 2) the trust meets the requirements of a minor's trust, described below; or 3) the trust contains a "*Crummey* power," described below.

Minor's Trust

Congress recognized that many minors are not mature enough to handle outright gifts of property in the manner which was intended by the donor. Therefore, Congress enacted I.R.C. Section 2503(c) which allows the grantor the use of the annual gift tax exclusion for gifts to minors in trust. The rules of such a "minor's trust" are listed in I.R.C. Section 2503(c). That Code section provides that no part of a gift made to a person under age twenty-one will be considered a gift of a future interest if: 1) the income and principal of the trust are distributable to the beneficiary at or before age 21; 2) there is no substantial restriction on the trustee's ability to distribute income to the beneficiary, or for his benefit, prior to his attaining age 21; and 3) if the beneficiary dies before attaining age 21, the property will either be distributed to his estate or be distributed according to the terms of the beneficiary's will.

Gifts to a minor's trust will qualify for the annual gift tax exclusion even where the trust document provides for automatic continuation of the trust after the beneficiary's twenty-first birthday if the beneficiary does not demand that the trust be terminated. The trust may either give the beneficiary a continuing right to terminate the trust and withdraw the property after age 21, or it may merely give him a limited time in which to compel distribution of the trust property. In the latter situation, if the minor fails to demand distribution, the trust will continue under its own terms. For example, the trust may state that the beneficiary has the right, between the date of his twenty-first birthday and sixty days thereafter, to demand the trustee to distribute the trust property to him. On the sixty-first day after his twenty-first birthday, if the beneficiary has not made the demand, the trust will continue until such time as the grantor stated in the document that it would terminate.

Like a gift under UGMA, the principal disadvantage of a minor's trust is that it must terminate (or at least be terminable by the beneficiary) while the beneficiary is still at a relatively young age.

Crummey Trust

Many parents wish to establish trusts having a longer duration than those allowed for UGMA gifts or gifts to a minor's trust. Such trusts do not qualify for the annual gift tax exclusion unless they contain a "*Crummey*" clause. The term is derived from a United States Court of Appeals case which established the validity of this form of trust.

The Court in *Crummey* held that the annual exclusion is available for a gift in trust as long as the beneficiary, or a third person on his behalf, has the power, in the year of the gift, to withdraw the value of the gift or a stated amount, whichever is less. For example, the trust might provide that the beneficiary can withdraw the lesser of $10,000 per year or the amount of the gift in that year. If no gift is made in a particular year, the beneficiary has no withdrawal right that year. If, in the following year, a $20,000 gift is made, the beneficiary can withdraw up to $10,000. A legal guardian need not be appointed so long as there is no impediment in the trust to the appointment of a guardian.

The primary advantage of the *Crummey* trust, as opposed to the techniques previously described, is that it can continue for as long as the grantor determines. The grantor may decide that the trust principal should not be distributed to the beneficiary until that beneficiary attains the age of fifty, or may decide that the principal will never be distributed to that beneficiary, but instead will be held for the benificiary's heirs. This flexibility is available in a *Crummey* trust.

To be continued.

Arizona's Rural Hospitals

How Important? How Healthy?

A Report

Stan Kleiner

Introduction

The rural hospital in Arizona strengthens a community's social fabric and serves as a vital resource by providing health care services and jobs. Yet, continuing operation has become increasingly difficult and questionable, especially for the independent, free standing community-based institution.

This paper examines the characteristics of Arizona's short-stay rural hospitals and discusses changes critical for their future stability. First, Arizona's rural short-stay hospitals are identified by size, location and operating levels. This information is compared to similar data for short-stay hospitals in greater metropolitan Tucson and Phoenix, Arizona's only urban areas. Second, the issues critical to rural hospitals—services, quality of care, impact of regulations and new technologies, and the availability of health manpower—are discussed with respect to their interrelated impact on economic viability. Last, trends are considered through an overview of current developments among Arizona's rural hospitals with examples of changing organizational structures, developing alliances with physicians and other hospitals, and new program initiatives.

By 1990 most of Arizona's rural hospitals will still be operating, a few may not, and two to three new hospitals will have been started. Several will even thrive. For all, the next five to ten years will be stressful as they seek to adapt to an increasingly complex environment.

Comparative Background Data

Arizona has 75 hospitals with 11,485 beds providing general, short-stay care.[1] The 35 hospitals in the metropolitan areas of greater Phoenix and Tucson have 79% of these beds for 75% of the state's population.[2] The remaining 40 hospitals with 21% of the beds are located throughout the state. Further, of the 75 hospitals, 54 are "community" institutions, i.e., hospitals whose services are available to the entire community. The other 21 hospitals (three VA, four military, five mine company owned and nine Indian Health Service) serve select populations.* Examination of just the short-stay "community" hospitals shows that metropolitan communities in Maricopa and Pima Counties have 7,839 (or 85%) of all community beds. Nonmetropolitan Arizona residents have 1,549 beds located in 25 hospitals (Tables 1, 2 and 3). When factoring out the select groups and short-stay beds designated for those population groups, there are approximately four

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From: University of Arizona, Rural Health Office, Tucson, Arizona 85724. Reprint requests to Mr. Kleiner, Study Commission on Long-term Care, 1831 West Jefferson, Room 109, Phoenix, Arizona 85007.

**In some communities the mine hospitals have been sources for emergency and primary care services for non-mining workers.*

In vitro studies demonstrate

Bactericidal activity

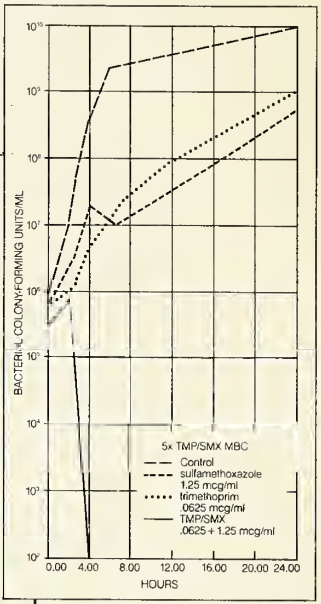
with minimal resistance

Percent of isolates of common uropathogens sensitive to BACTRIM and to other antimicrobials

	Escherichia coli	Klebsiella pneumoniae	Proteus mirabilis	Proteus vulgaris	Proteus sp.	Enterobacter sp.	Enterobacter aerogenes	Enterobacter cloacae
BACTRIM	**96%** 328,598	**89%** 63,551	**93%** 62,691	**84%** 4174	**91%** 4381	**88%** 1736	**96%** 7326	**92%** 11,856
ampicillin	72% 345,209	5% 65,466	85% 67,338	16% 4381	70% 4402	10% 1775	9% 7759	11% 12,091
cephalexin†	81% 343,339	85% 67,031	92% 67,027	16% 4398	80% 4365	22% 1834	13% 7571	12% 11,846
nitrofurantoin	97% 307,785	65% 61,162	7% 59,775	13% 3848	14% 3059	67% 1707	60% 7109	67% 10,830

†Analogous to cephalothin, the primary antibiotic disc used in testing.
Source: The Bacteriologic Report, BAC-DATA Medical Information Systems, Inc., Winter Series, 1981-82.
Numbers under percentages refer to the projected number of isolates tested.

RAPID *IN VITRO* DESTRUCTION OF *E. COLI**



Kill curve kinetics of Bactrim and its individual components against *E. coli in vitro.*[1]

The bactericidal action of Bactrim has been demonstrated *in vitro* on laboratory strains of *E. coli*[1,2] and on clinical isolates of *E. coli, Klebsiella-Enterobacter, Proteus mirabilis* and *Morganella morganii*[3]—the most common causative organisms of urinary tract infections.[4] More than 100 published studies attest to the efficacy of Bactrim in recurrent urinary tract infections due to these organisms.[5] In comparative studies with other antimicrobials, Bactrim has consistently demonstrated unsurpassed efficacy during therapy.[6-11]

Resistance to Bactrim develops more slowly than to either of its components alone *in vitro.** Among urinary tract isolates, resistance has rarely emerged in susceptible strains.[5,12] Bactrim is contraindicated in pregnancy at term, during lactation, in infants less than two months old and in documented megaloblastic anemia due to folate deficiency.

Initial episodes of uncomplicated urinary infections should be treated with a single-agent antimicrobial.

Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

b.i.d. *for recurrent urinary tract infections*

**In vitro* data do not necessarily predict clinical results.

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See next page for references and a summary of product information.

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Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli, Klebsiella-Enterobacter, Proteus mirabilis, Proteus vulgaris, Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β-hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, hepatocellular necrosis, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients. *Pregnancy:* Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions.* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, hepatocellular necrosis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: *Not recommended for infants less than two months of age.*

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: *Double Strength (DS) tablets*, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 20 *Tablets*, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100, Prescription Paks of 40. *Pediatric Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). *Suspension*, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per tea spoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

ROCHE®

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

References:

1. Stone PH, Turi ZG, Muller JE Efficacy of nifedipine therapy for refractory angina pectoris *Am Heart J* 104 672-681, September 1982
2. Antman E, Muller J, Goldberg S, et al. Nifedipine therapy for coronary-artery spasm Experience in 127 patients *N Engl J Med* 302 1269-1273, June 5, 1980

BRIEF SUMMARY

PROCARDIA® (nifedipine) **CAPSULES** For Oral Use

INDICATIONS AND USAGE: I. Vasospastic Angina: PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria 1) classical pattern of angina at rest accompanied by ST segment elevation, 2) angina or coronary artery spasm provoked by ergonovine or 3) angiographically demonstrated coronary artery spasm In those patients who have had angiography the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e g where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm, or when angina is refractory to nitrates and or adequate doses of beta blockers

II. **Chronic Stable Angina (Classical Effort-Associated Angina):** PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and or organic nitrates or who cannot tolerate those agents

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment especially in patients with compromised left ventricular function or cardiac conduction abnormalities When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs (See Warnings)

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA

WARNINGS: Excessive Hypotension: Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers

Severe hypotension and or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and, if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery

Increased Angina: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA

Congestive Heart Failure: Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA Patients with tight aortic stenosis may be at greater risk for such an event

PRECAUTIONS: General: Hypotension: Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested Close observation is especially recommended for patients already taking medications that are known to lower blood pressure (See Warnings)

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA This edema occurs primarily in the lower extremities and usually responds to diuretic therapy With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction

Drug interactions: Beta-adrenergic blocking agents (See Indications and Warnings) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure severe hypotension or exacerbation of angina

Long-acting nitrates PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination

Digitalis Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers The average increase was 45% Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured digitalis toxicity was not observed Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization

Carcinogenesis, mutagenesis, impairment of fertility When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose

Pregnancy Category C Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness, peripheral edema nausea, weakness, headache and flushing each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0 5% Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication Additionally the following have been reported muscle cramps, nervousness dyspnea, nasal and chest congestion, diarrhea constipation, inflammation, joint stiffness, shakiness, sleep disturbances blurred vision, difficulties in balance dermatitis pruritus urticaria, fever, sweating chills and sexual difficulties Very rarely introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension

In addition, more serious adverse events were observed not readily distinguishable from the natural history of the disease in these patients It remains possible however, that some or many of these events were drug related Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2% Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0 5% of patients

Laboratory Tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK LDH SGOT, and SGPT have been noted and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy The relationship to PROCARDIA therapy is uncertain These laboratory abnormalities have rarely been associated with clinical symptoms Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature

HOW SUPPLIED: Each orange soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66) 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41) The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container

More detailed professional information available on request

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Quotes from an unsolicited letter received by Pfizer from an angina patient.
While this patient's experience is representative of many unsolicited comments received not all patients will respond to Procardia nor will they all respond to the same degree.

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"My daily routine consisted of sitting in my chair trying to stay alive."

"My doctor switched me to PROCARDIA[*] *as soon as it became available. The change in my condition is remarkable."*

"I shop, cook and can plant flowers again."

"I have been able to do volunteer work...and feel needed and useful once again."

PROCARDIA can mean the return to a more normal life for your patients—having fewer anginal attacks,[1] taking fewer nitroglycerin tablets,[2] doing more, and being more productive once again.

Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).

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PROCARDIA®

(NIFEDIPINE) *Capsules 10 mg*

[*] Procardia is indicated for the management of:
1) Confirmed vasospastic angina.
2) Angina where the clinical presentation suggests a possible vasospastic component.
3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Please see PROCARDIA *brief summary on adjoining page.*

Motrin®
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600 mg Tablets

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J-9043-4 July 19

community beds per 1,000 population available to metropolitan residents and less than three community beds per 1,000 for rural residents.

By federal and state guidelines, Arizona has more than enough hospital beds based on statewide averages.[3] The metropolitan areas, even when considering seasonal variations and location, already have an aggregate surplus of beds; and, more than 500 additional beds will be ready for occupancy in the spring of 1984.

Geographically, Arizona is a rural state with 25% of its residents living across 90% of its 110,000 square miles. As shown on the following map, the 25 community and 15 other short-stay hospitals are strategically located throughout the state. For the past ten years this pattern had been relatively stable. However, this has begun to change during the early 1980s.

Closings:

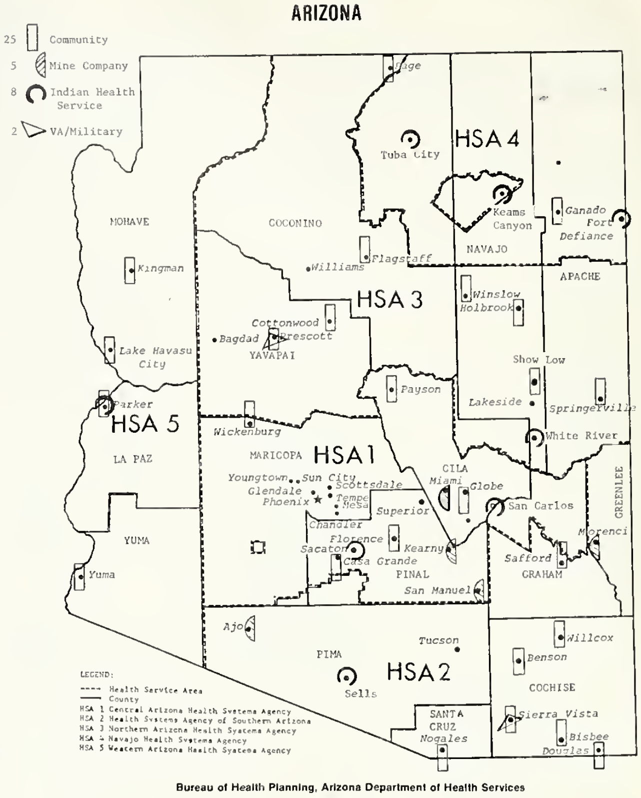
Williams Hospital, Williams (27 beds)—1980
Magna Copper Company, Superior (20 beds)—1982
Bagdad Hospital, Bagdad (11 beds)—1983

Openings:

Bullhead Community Hospital, Bullhead City (36 beds announced for December 1)—1983

Table 4 provides current information for each rural community hospital. They range in bed capacity from 22 to 220 beds and from 14% to 73% in terms of the occupancy for those beds. A comparison of aggregate data averages of rural hospitals to their metropolitan counterparts shows a four-fold difference in operating capacities (Table 5).

Simply stated, rural Arizona community hospitals are very different from their metropolitan counterparts. They serve larger geographic areas inhabited by smaller numbers of people who have longer travel times and fewer options for inpatient care. Rural hospitals serve as the foundation or anchor on which the population is dependent for a wide range of health services, certainly more so than any metropolitan population would have for any single hospital. For example, the local rural hospital remains the first choice for inpatient diagnosis and treatment of simple problems. It is the backbone upon which an area's emergency medical services (EMS) program is dependent. Further, without the rural hospital the ability to attract and retain competent physicians (and other health professionals) is significantly reduced. Thus, the presence of a rural hospital enhances the ability of a community to maintain adequate health services. Without health services, communities are less able to attract the people and capital resources necessary for economic growth.



Bureau of Health Planning, Arizona Department of Health Services

Critical Issues

What then is the general status of Arizona's rural hospitals and what are the issues critical for their continued operation? With the exception of the eight to ten hospitals that usually have more than fifty beds and over 65% occupancy, the State's smaller rural hospitals are typically struggling, quite vulnerable to internal and external changes. Most difficult is assurance of adequate revenues and financial reserves to permit employment of skilled staff,

Table 1
Number and Percent of Short Stay Beds/Number of Hospitals (1981)

	Hospital Type				
	Community	**IHS**	**U.S. Military/VA**	**Mine Company**	**Total**
letropolitan Arizona					
hoenix	5608/22 (49%)	186/1 (2%)	616/3 (5%)	—	6410/26 (56%)
ucson	2231/7 (19%)	—	415/2 (4%)	—	2646/9 (23%)
letro Total	7839/29 (68%)	186/1 (2%)	1031/5 (9%)		9056/35 (79%)
lonmetro Arizona					
ll Areas Dutside hoenix/Tucson	1549/25 (13%)	382/8 (3%)	312/2 (3%)	186/5 (2%)	2429/40 (21%)
tate Total	9388/54 (81%)	568/9 (5%)	1343/7 (12%)	186/5 (2%)	11485/75 (100%)

Table 2
Nonmetropolitan
Arizona Hospitals Providing Short Stay Care (1981)
(Beds/No. Hospitals)

	Hospital Type				
County	**Community**	**IHS**	**U.S. Military/Va**	**Mine Company**	**Total**
Apache	70/2	76/1			146/3
Cochise	212/5		95/1		307/2
Coconino	135/2	108/1			243/3
Gila	124/2	36/1		54/1	214/4
Graham	44/1				44/1
Greenlee				49/1	49/1
La Paz	39/1	16/1			55/2
Maricopa	34/1				34/1
Mohave	171/2				171/2
Navajo	100/3	76/2			176/5
Pima		40/1		33/1	73/1
Pinal	134/2	30/1		50/2	214/5
Santa Cruz	55/1				55/1
Yavapai	211/2		217/1		428/3
Yuma	220/1				220/1
Total	**1549/25**	**382/8**	**312/2**	**186/5**	**2429/40**

Table 3
Arizona Population Growth

	1970	**(%)**	**1980**	**(%)**	**1990**	**(%)**	**2000**	**(%)**
State Total	1,775,399		2,718,425		3,609,000		4,626,000	
Maricopa County	971,228		1,509,262		2,033,200		2,634,700	
		(75%)		(75%)		(76%)		(77%)
Pima County	351,667		531,443		710,100		921,900	
All Other Counties	452,504	(25%)	677,720	(25%)	865,100	(24%)	1,069,400	(23%)
			53% Growth in ten years		*33% Growth in ten years*		*28% Growth in ten years*	

Source: Valley National Bank, Arizona Statistical Review, September 1982

facility maintenance and capital equipment purchases. Without a sound financial base a hospital loses stature in the eyes of its primary customers, both patients and medical staff. Conversely, without sufficient utilization the financial base deteriorates, thus creating a self-feeding, downward spiral.

Ideally, a community hospital, especially the smaller rural institution, seeks to provide the broadest range of services compatible with reasonable economic efficiency and an acceptable level of quality.[4] To succeed, the rural hospital must deal with the following issues:

Services

The traditional inpatient and outpatient services are closely related to available medical and professional staff and the skills they bring (Table 6).

The largest inpatient component of care is adult medicine and the least active is pediatrics. Outpatient services have been traditionally less developed and provide the greatest opportunity for rural hospital development.

Another service not listed is long-term care. Several hospitals operate separately licensed extended case beds. Many hospitals have the "swing bed" concept as a potential method for filling empty inpatient beds. Rural hospitals can use vacant licensed inpatient beds for patients requiring nursing home care and receive reimbursement at the longterm care rate. Hospitals in Arizona, however, have resisted the use of swing beds, preferring to receive the full reimbursement for an inpatient bed.

The array of services provided translates into patient days and case mix, which in turn determines the billing and reimbursement levels. Without a reasonably balanced mix of services, the community hospital has a diminished revenue base. Further, the prospective rate setting for Medicare based on diagnostic related groups (DRGs) will place even greater pressure on rural hospitals whose case mix acuity is generally lower than urban hospitals.

Quality

A quality institution attracts quality staff and quality

Table 4
Rural Community Hospitals (1982)

Hospitals	Number Short Stay Bed	Average Length of Stay	Average Daily Census	Average Percent Occupancy	Annual Admissions
Apache County					
Sage Memorial Hospital Ganado	45	4.0	15	30	1350
White Mountain Community Hospital Springerville	25	3.6	10	40	1033
Cochise County					
Benson Hospital Benson	22	5.0	11	50	786
Copper Queen Community Hospital—Bisbee	32	4.2	15	46	1304
Southeast Arizona Medical Center—Douglas	79	4.9	32	40	2336
Sierra Vista Community Hospital—Sierra Vista	55	4.3	38	69	3221
Northern Cochise Community Hospital Wilcox	24	6.6	17	70	940
Coconino County					
Flagstaff Community Hospital—Flagstaff	110	4.2	74	68	6430
Page Hospital—Page	25	3.2	7	26	799
Gila County					
Gila County General Hospital—Globe	80	8.6	33	41	1295
Lewis Pyle Memorial Hospital—Payson	44	5.3	32	73	2181
Graham County					
Mt. Graham Community Hospital—Safford	44	4.5	28	65	2320
Greenlee County					
No Rural Community Hospital	—	—	—	—	—
La Paz County					
Parker Community Hospital—Parker	39	6.1	17	44	1099
Maricopa County					
Community Hospital Wickenberg	34	5.3	14	14	836
Mohave County					
Mohave General Hospital Kingman	83	5.3	63	73	4184
Havasu Regional Hospital Lake Havasu City	88	5.2	42.5	48	293
Navajo County					
Northland Medical Center—Holbrook	23	3.0	9	39	1010
Navapache Hospital Show Low	35	3.5	22	65	2361
Winslow Memorial Hospital—Winslow	42	4.1	14	33	1239
Pima County					
No Rural Community Hospital	—	—	—	—	—
Pinal County					
Hoemako Hospital Casa Grande	74	5.0	42	42	3066
Pinal General Hospital Florence	70	6.0	43	61	2362
Santa Cruz County					
Holy Cross Hospital & Health Center—Nogales	55	4.1	19	31	1691
Yavapai County					
Marcus J. Lawrence Memorial Hospital Cottonwood	92	6.7	69	62	3578
Yavapai Community Hospital Prescott	119	5.4	73	61	4934
Yuma County					
Yuma Regional Medical Center—Yuma	220	6.0	152	72	9225

Table 5
Rural/Metropolitan Community Hospitals
Comparative Annual Averages (1981)

	Beds	Average Length of Stay	Percent Annual Occupancy	Annual Admissions
Rural—25 Hospitals	62	5.0	57%	2,500
Metropolitan Phoenix & Tucson—29 Hospitals	270	6.9	72%	10,265

people make a quality institution. This is easy to say, but often harder to establish.

Quality care is largely influenced by the accumulated experience the hospital gains in the care of a given problem or the performance of a specific procedure. Performance improves with experience. Moreover, for many surgical and medical problems, adequate quality of performance is often achieved with threshold volumes.

Formal quality assurance programs are difficult to maintain in smaller hospitals. The best results are achieved when efforts are truly supported by committed staff at all levels and are viewed as useful to everyday needs being both helpful and simple to do.

External forces can limit a hospital in its capacity to maintain quality. For example, without the skills and interest from medical staff members, quality remains important but unattended. The presence or absence of a regional obstetrical and perinatal network dictates the ability to provide quality maternity care. The same is true for emergency services, which have an interrelated link between the hospital and the field components for prehospital care.

Regulations/New Technologies

All hospitals, but particularly the rural hospitals, have experienced significant pressure to adhere to a variety of regulations on planning, Medicare, utilization review, and cost controls. Regulations have been a constant fact of life making daily operations more complex, often requiring expensive or scarce legal and accounting resources. One result has been for hospitals to seek opportunities to reduce the influence of regulations and regulatory agencies.

Rural hospitals cannot keep up with the ever increasing demands created by new medical care technologies. They often lack funds to purchase costly equipment; have too few patients to justify large costs; and don't have adequate staff to operate and maintain the equipment. Introducing expensive new technologies will continue to be difficult for rural hospitals. A reasonable solution is the incorporation of less costly technology that can be supported by the population served with referral arrangements for costly technologies available at larger tertiary hospitals.

Health Manpower

Without medical staff, hospitals can't operate and rural institutions are often the most pressed for an adequate physician base. Often overlooked is the converse case—without a hospital a physician is less likely to maintain a viable practice. A third or more of the physicians' billings come from hospital activities. Thus, there is a mutual need between physician and hospital that is becoming increasingly recognized in rural communities where resources are often scarce.

Qualified personnel (nurses, physical therapists, lab and x-ray technicians and medical library staff) are also important to the hospital, if quality care is to be provided. Once recruited, initial and ongoing education programs are

Table 6
Hospital Services

	Inpatient	
I.	Obstetrical Care	Is an important service to community. Can be best established for routine, uncomplicated deliveries with ties to a regional prenatal and obstetrical network to assure proper referral care for complicated cases and rapid transport for unanticipated problems.
II.	Pediatric	Usually the least active inpatient component in rural hospitals. Largely dependent on availability of trained pediatric physicians and their treatment style.
III.	Internal Medicine for adults	The largest component of rural hospital activity and a major user of hospital diagnostic services.
IV.	Surgery	Largely dependent upon physicians' surgical skills available to hospital, often using visiting surgeons. For proficiency, most surgical procedures require minimal volumes to maintain staff skills. An area requiring continued quality assurance surveillance.
	Outpatient	
I.	Emergency Medical Service	Usually found in all rural hospitals, even though service may be limited. The hospital is vital resource for improving prehospital care. Staffing of emergency department with nurses, physicians, physicians' assistants and other EMS personnel competent in emergency care is critical.
II.	Laboratory, Pharmacy, Physical Therapy	Usually limited as outpatient service and dependent on availability of skilled staff. Can be major revenue source.
III.	Others-Home Health, Health Education, Counseling, Adult Day Care	Hospitals may participate in these programs but usually the the hospital is not the formal

needed to maintain skills. As a particular type of health professional becomes scarce (e.g., nurses or physical therapists) the rural hospital is the most vulnerable as they compete against metropolitan facilities.

Long-Term, Economic Viability

The patient day has been the yardstick by which hospitals have gauged their success with respect to costs and revenues. The average costs per day have continued to rise. Any concurrent reduction in occupancy and reduced use of diagnostic services or other money generating activities causes an increase in the average per patient day bed charge. Likewise, intensity and case mix also affect revenues per patient day. The rural hospitals under fifty beds are most susceptible to these fluctuations affecting total patient days, and Arizona has 13 such community hospitals. Between 1972 and 1978, the United States experienced 315 hospital closures. Rural hospitals represented the largest portion of these closures.

What then can be done to reverse the weakening of rural hospitals? What is happening in Arizona and what is the future for the state's rural hospitals? The elements include better planning, efforts to upgrade and maintain quality, improved recruitment and continuing education programs, diversification of services, new organizational structures and closer relationships with clinicians.

Current Developments/Future Trends

There is clear recognition that the small community hospital, standing alone, is likely to fail if it remains dependent on traditional inpatient services. The key to success is the maintenance of adequate resources by effectively managing those already available while also seeking opportunities for expanding revenues. Hospital policy makers and administrative leaders have recognized that they must continually develop management skills, clinical manpower, access to new revenues, stonger political representation and a more defined inpatient case mix. Two major approaches are discussed below. The first is participation in multi-hospital systems with the management contract being the most common type of linkage. The second is the creation of diversified services in ambulatory care and new prepaid financing arrangements. Examples include outpatient surgery, primary and urgent care centers, and the formation of capitated provider health plans.

Mutli-Hospital System Relationships

In Arizona the most common method of linking to a larger multi-hospital system is the management contract. In this arrangement the local hospital retains its policy board and ownership while day-to-day management is delegated to the outside entity. Typically, the hospital administrator is an employee of the multi-hospital system. As shown in Table 7 there are presently ten Arizona rural community hospitals under management contracts with another organization.[5]

With a management contract comes increased opportunity to call upon a variety of resources (i.e., planning, purchasing, public relations, legal assistance, accounting) that can be made available from the corporate system (usually for an additional fee).

Of special note from the above list is the role of metropolitan Phoenix hospitals in the management of rural Arizona hospitals. A definite corporate strategy of several Phoenix hospital systems is the extension into distant geographic areas. In return for assisting small institutions, the Phoenix organizations expect to receive referral cases, critically needed for the occupancy of their metropolitan tertiary beds. These efforts have now reached a point where there is a feeling of competition in rural Arizona that is every bit as alive as it is in downtown Phoenix. For some rural community hospitals the advance of their "city cousins" is viewed as a potential resource. For others, these movements are looked upon with mistrust and fear that their institutions will experience the loss of local autonomy and good will. Regardless, more rural hospitals will be considering contract management as a means of coping with complex problems. Although there will be some hospitals desiring to terminate contracts, the overall direction is for more institutions to purchase management services from an outside multi-hospital system.

Table 7
Rural Arizona Hospitals Under Contract Management

Rural Hospital	Management Entity
Page Hospital—Page	Samaritan Health Services Phoenix, Arizona
White Mountain Community Hospital Springerville	
Kane County Hospital Knab, Utah	
Gila County General Hospital—Globe	Hospital Corporation of America, Nashville, TN
Havasu Regional Hospital Lake Havasu City	Lutheran Hospitals and Homes Society of America—Fargo, ND
Hoemako Hospital Casa Grande	Combined Health Resources, Inc., Phoenix, AZ
Northland Medical Center Holbrook	Baptist Hospitals & Health Systems (Under its Wesin Corporation) Phoenix, AZ
Bullhead Community Hospital-Bullhead City	(Owned by Baptist/to open December 1983)
Navapache Hospital Show Low	National Medical Enterprises Los Angeles, CA
Holy Cross Hospital Nogales	Sisters of St. Joseph's of Carondelet, Los Angeles, CA
Southeastern AZ Medical Center—Douglas	Republic Health Corp. Dallas, TX

One interesting multi-hospital development in Arizona is the formation of a separate not-for-profit corporation, Unisun Management Systems, Inc. by Marcus J. Lawrence Memorial Hospital in Cottonwood, Yavapai Community Hospital in Prescott and Flagstaff Community Hospital. Although still in its infancy, Unisun's intent is to provide its founders with increased collective strength for financial needs and newly developing service ventures. Unisun could eventually become the vehicle for these three hospitals to establish their own multi-hospital system under common leadership.

Diversified Services/Financing Arrangements

Arizona's rural hospitals, like their urban counterparts are definitely moving to diversify, particularly in the less traditional areas of outpatient/ambulatory services.[6,7]

Several trends are emerging. Rural hospitals are operating primary care practices, many of which are located as free standing centers in communities away from the hospital. Also, with these practices are increases in support services (i.e., laboratory and x-ray). Organizational arrangements vary from full hospital ownership and management to shared control with physicians. One hospital has established an outlying clinic under a separate for profit entity. Outpatient surgery is another direction taken by several rural hospitals. Likewise, hospitals are looking at hospice care, expanded emergency service, home health services, and transportation services to facilitate patients' assess to care.

The movement toward prepayment and capitated care has been structured largely by Arizona's Health Care Cost Containment System (AHCCCS) which already has had an immense impact on the state's rural hospitals. During the program's first year (1981-1982) several hospitals went beyond passive participation, taking active roles in creating provider plans, and more are following this example as AHCCCS negotiates and selects plans for the second year.

By serving in a leadership role, the hospitals are able to deal directly with all the critical issues addressed earlier as they determine their role with respect to services, quality of care, and manpower. Hospital administrators and boards must focus on planning, understand market share, work cooperatively with physicians and, all the while, look toward "bottom line" financial implications.

Beginning the summer of 1982, several plans emerged with rural hospitals playing a prominent role. As second year AHCCCS bids are being completed, more than half of the state's rural hospitals actively worked on provider plan proposals. Below are brief summaries of these efforts.

Mt. Graham Community Health Plan—Initiated by Mt. Graham Community Hospital and it's active medical staff members. The Plan anticipates continuing as an AHCCCS provider while also seeking to expand to a full service health maintenance organization. The hospital administrator also serves as the Plan director.

Pinal General Hospital Plan—As a county hospital. Pinal General with other county programs and has enrolled 3,500 AHCCCS members. Second year participation in AHCCCS is anticipated.

Northern Arizona Family Health Plan—Serves AHCCCS residents in Yavapai County and a portion of Coconino County with Marcus J. Lawrence and Yavapai Community Hospital. Hospitals on the Plan board and sharing risk with participating physicians. The Plan will expand to offer services to private sector, including Medicare patients.

Medical Care System, Inc. (White Mountain Community Hospital and Samaritan Health Service)—Serves nonreservation areas in Apache County. Hospital and medical staff members participate jointly, and continued second year AHCCCS participation is expected.

Comprehensive ACCESS Plan—Initiated by the Flagstaff Community Hospital with plans to seek a second year as an AHCCCS provider.

Family Health Plan of Northeast Arizona—A new plan established to serve AHCCCS patients in Navajo and Apache counties. Strong organizational support from Navapache Hospital and Northland Medical Center. Also, a letter of intent to participate has been submitted by the Sage Memorial Hospital.

Cochise Family Health—Another newly organized plan is supported by all five community hospitals in Cochise County. They are Benson Hospital, Copper Queen Community, Southeast Arizona Medical Center, Sierra Vista Community Hospital and Northern Cochise Community Hospital.

Collectively, these seven AHCCCS plans have been actively molded by fifteen hospitals. If all AHCCCS bids are successful, the state's rural hospitals will have taken a large step forward in responding forcefully to the critical survival issues. The addition of capitation payments to revenue enables the hospitals to offset the lower utilization levels being experienced by Plan's patients.

AHCCCS has pushed hospitals into a sink-or-swim situation. The majority are trying to swim. The strokes may be initially clumsy and the new plans are experiencing some stiff competition. Yet, the efforts are healthy.

AHCCCS is the stimulus to bring hospitals toward a full reassessment of their mission. Some will certainly go forward with prepaid care to the entire community and in doing so, will become integral components of full service systems of care.

Conclusion

Arizona's rural hospitals are different from their urban counterparts. On average they are considerably smaller, but their presence has a much larger impact on the populations they serve. Rural hospitals, specifically those under fifty beds, are more susceptible to the impact of financial fluctuations. They must give careful consideration to the appropriateness of service they provide as well as the human and financial resources they require. Future directions include expanding services/revenues, linking with other hospitals and active involvement in prepaid, capitated health plans.

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Sports Medicine:
ts Past, Present and Future

E. C. Percy, M.D.

In addressing the subject of sports medicine, the question usually raised is, "What in the world is sports medicine?" Why is it now considered a specialty? In sports medicine, the emphasis is on health and not disease. The patient population consists essentially of healthy people whose main desire is rapid return to their chosen activity. That is not to say that athletes don't get sick, as well as having mechanical musculoskeletel problems. The aim of sports medicine is to keep the injured athlete relatively active. In other words, absolute rest is often the basis of treatment of disease but not, generally speaking, in the treatment of athletic injuries. The injured athlete is different from the average patient. They present early with an injury and they feel that the injury is not insignificant. The injured competitor recovers rapidly and is well motivated to return to his or her chosen activity. They are, however, often overly concerned and more demanding than the nonathlete and are apt to expect instant cure. The mechanics of injury will generally point to the diagnosis so that a thorough history of the activity must be taken. The presenting lesion is often the result of overtraining (overuse), faulty training habits, or failure to recognize the early warning symptoms of tissue damage. In a sense, a self-inflicted lesion. Finally, we must consider athletics as a wide spectrum of activities, varying from the weekend tennis player at the one end, through the daily jogger or swimmer, to the elite and professional athlete. In this spectrum are included competitors of all ages and both sexes.

In discussing sports medicine, let us start with the origin of sport and trace its history up to the present era. The first records we have of organized sport are the Greek Olympics which were started in 776 B.C. They were held every four years for five days in mid-summer in Olympia which was a sanctuary of the God Zeus and a center of Greek culture. The Olympics in those early days were a melange of physical and mental participation and included artists, authors, sculptors, as well as the general athletic concept of the games. A blending of the mind and the body. The original sports were boxing, wrestling, discus, javelin, running and chariot racing. All of these sports persist in today's competitions, except the last which has survived as sulky racing.

Athlete is a Greek word meaning participant, while gymnasium is a Greek word meaning a school for naked exercise. The word gymnastes referred to a physician, and Herodicus, a teacher of Hippocrates, circa 350 B.C., was a physician with a knowledge of physical rehabilitation. Galen is said to have been the father of Sports Medicine, but he didn't appear on the scene until about 130 A.D. It is said that even the ancient Olympic competitors used "ergogenic aids" in an attempt to improve their performance, now a major problem with the modern athlete.

One of the earliest organized team sports would seem to have been a form of soccer, a popular sport with the early Roman legions. Footballs were no doubt fashioned from various hollow viscera such as bladders or stomachs stuffed with straw.

Football (soccer) became a wild sport in the eighteenth and nineteenth centuries. President Theodore Roosevelt almost banned football when in 1905, he stated "Let's eradicate football, it's too rough." Rugby, incidentally, owes its origins to Webb Ellis, who, while playing soccer at Rugby School in England in 1823, picked up the ball and ran with it across the goal line scoring a "touchdown." The oval ball was developed later.

The first intercollegiate American football game, as we know the game today, was played in 1874 between McGill University (Canada) and Harvard. McGill was invited down to Harvard but, because of a tight budget, they were only able to bring eleven players on the team. (Normally at that time they played fifteen.) Harvard played with a set of rules that resembled soccer, while McGill played a type of rugby. McGill introduced their game to Harvard who liked and adopted the modified rules. It was from this early encounter that our contemporary game of American football evolved using eleven players. Sport became a vital part of the early Central American culture as is evidenced by the remaining ball courts and primitive sculptures found in Mexico. Perhaps an early form of basketball or even baseball is suggested in those ancient artifacts which have survived. Lacrosse was one of the early sports on our North American scene. Indian tribes competed against one another with the goals many miles apart.

Up until 1936 the arts were a part of the Olympics just as in the original Olympics. Robert Tait MacKenzie, a physical educator, and a world renowned sculptor was a physician to the U.S. Olympic team in 1904. He later won an Olympic cultural medal in 1936 for an athletic medallion he sculpted.

In the present era it is evident that what we are now doing for recreation what our ancestors did for survival. Cross-country skiing, snowshoeing, running, swimming and many other such pastimes (now called sports) were activities which our ancestors used to survive in a hostile environment and in obtaining daily food by hunting. In this country the mails were delivered in the Sierra Mountains on skis as early as 1860.

The most important aspect of sports medicine in the present era is prevention, while in the past it had been treatment alone. Certainly physical fitness may be one of the best means of preventing an injury or illness (such as a heart attack). When we look at today's most common causes of death many are diseases of affluence. Heart disease, lung disease, suicide, accidents and motor vehicle accidents are the killers. In the age group under twenty-five years, the leading causes of death are motorvehicle accidents, suicides, and murders! Participation in sports would probably help prevent a lot of these problems in our youth.

Another drug problem is the widespread use of anabolic steroids, the so-called "breakfast of champions." This male synthetic hormone is used in an attempt to increase muscle strength by both males and females. It may lead to increased muscle bulk, but it is a very dangerous drug. Its use is illegal under the International Olympic Committee's rules. In spite of its known health risks, its use is almost universal. It has been said that "Between 99% to 101% of the entrants to the Mr. America Contest have taken anabolic steroids." There is yet no hard scientific data to prove that these chemical substances do increase performance. Some of the more common complications are hepatitis, cirrhosis or even cancer of the liver, hypertension, and in the male, impotence. The female user may also develop the male distribution of hair and a masculine voice. It is felt that these materials also increase the male

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From: University of Arizona Health Sciences Center, Tucson, Arizona 85724. Dr. Percy is an Associate Professor of Surgery and Director of the Sports Medicine Program. This was the keynote address delivered to the 9th Annual Sports Medicine Symposium, of the Arizona Medicial Association, Phoenix, April 1983.

aggressive instinct. The American College of Sports Medicine has wisely taken a firm stand advising against the prescription of these materials by physicians or other health professionals. A physician recently lost his license for six months because he was alleged to have prescribed drugs to an athlete. Athletes claiming that they have been turned on to drugs by the prescription from a team doctor have sued both the team management and the physician.

The use of blood doping (boosting) has been reported in athletics, but is probably rarely used. The reinfusion of an individual's own blood at a later date is not likely to increase performance and can be a very hazardous procedure. Mismatched transfusion, hepatitis and infections are but a few of the possible complications.

We need to educate rather than penalize the unfortunate athlete who takes drugs and stress the dangers of these so-called ergogenic aids. The health hazards far exceed any possible advantages. The hazards are real not only to the user but also to younger athletes who look upon the older athletes as a role model.

Athletes in general are very gullible and susceptible to suggestion by promoters of substances alleged to improve upon performance. For a product to be successfully marketed among athletes I believe it must meet the following qualifications:

1. Should be organic if possible.
2. Must be endorsed by professional athletes.
3. Should be publicized favorably by the media.
4. Must be unreasonably expensive.
5. Must be roundly condemned by the medical profession on sound scientific evidence.

Another trend in this era is that sport is becoming more violent because of drugs? As mentioned previously many drugs do make the athlete more aggressive, for example stimulants and anabolic steroids.

Football is certainly one of our most violent sports. Is it approaching the level of violence which almost caused its demise in 1905? One writer has described it as follows: "Football, he said, exhibits some of the worst characteristics of our culture. It interlinks the four qualities of drive, violence, physical brutality and profit maximizing commercialization, with an authoritarian military mentality accepted." However, if you look at statistics, football is not really that bad as far as deaths are concerned. For each death due to football, there are more than 250 deaths each from motor vehicle accidents and drownings per capita. A lot of the drownings, particularly in scuba diving, are related to drugs and alcohol.

Hockey is a violent sport, not really from the activity itself, but rather from the associated aggressive behavior. In fact, it has reached the stage where one has been heard to say, "I went to the fights and a hockey game broke out!"

A sad commentary on youth sport is that the Tucson School District recently banned shaking hands among high school team athletes following football games because this act might lead to fights!

Boxing is by its very nature a violent activity. (I do not like to refer to anything as a sport whose aim is injury.) I would support the recent American Medical Association's proposal on anti-boxing legislation. Certainly most universities on this continent have wisely eliminated boxing from their varsity sports. We are having enough trouble getting degrees for our college athletes without further compromising their cerebral capacity! Boxing has been banned in some Scandinavian countries but such legislation will be hard to adopt in this country because of the "big bucks" it produces and the gambling interests involved.

The fans also contribute to violence in sport. One reads of spectators injuring referees and even coaches after a loss. Mob violence, particularly in soccer, has led to property damage and loss of lives in many cities. Witness the damage done in 1954 in Montreal, Canada when the favorite hockey player was banned from playing for several games. A reflection on days gone by when the emperor Justinian terminated the Olympic games in 532 A.D. because of mob violence.

Another trend today is that of litigation. We are now living in a very litigious society and our legal colleagues are responsible for many very large settlements. Will this discourage physicians from direct involvement in the health care of athletic teams? Will equipment manufacturers be forced to stop manufacturing their products because of costly lawsuits? My intention is not to decry litigation, but rather the outlandishly large settlements awarded in many instances.

Another study from England has compared death rates in men in comparable age groups, one in Great Britian, the other in the United States in 1968 and in 1975. The death rate for 100,000 men in the age groups 45 to 54 years in England and Wales in 1968 and 1975 increased, but dropped significantly in the U.S.A. The death rate rose similarly in England in the 55-64 age group and once again dropped in the U.S.A. The difference in death rates may in part be due to the fact that in the 60's the U.S.A. suddenly got turned on with physical fitness. Certainly, insurance companies aren't philanthropical societies, but they are giving away money now in reduced premiums if the insured can prove that they are participating in a bona fide physical fitness program. In addition, if you are a nonsmoker, most insurance companies will substantially reduce the premium on your life and car insurance.

We are in the midst of a fitness phobia. It was in part initiated by President Eisenhower in 1956 with the President's Council on Youth Fitness and was reinforced by President Kennedy in 1963 who formed the President's Council on Physical Fitness. Further impetus was added in 1968 by President Johnson who formed the President's Council in Fitness and Sports. The public's attention was directed towards fitness and, equally as important, the government started to direct public monies to the development of fitness and preventative medicine in sport.

The emphasis now is on exercise rather than socializing and hopefully there will soon be more participants than spectators. In many hotels you may find a jogger's map in the drawer next to the telephone book of that area. A number of medical meetings now incorporate a "Fun Run" for the registrants on their scientific program. Hopefully we will see a similar development in business congresses.

Since the 1800's there has been a steady increase in height and weight in our population. The average age of the onset of menstruation in the young female population has dropped from 17 years in 1840 to 12.3 years in 1980. The adolescent age spurt now appears four years sooner and children are maturing earlier. Adults are living longer and aging more slowly and as a result we now have a larger geriatric population. These changes have been ascribed to better nutrition, less inbreeding, better physical fitness, warmer world temperatures, eradication of disease and generally better economic levels. This is not to say that exercise per se will increase longevity, but it will certainly improve one's lifestyle and allow that person to get more enjoyment out of life.

Cooper reports a 23% decrease in deaths from heart attack from 1968 to 1978. During the same era, he states there was a 36% decrease in deaths from cerebrovascular accidents and a 48% decrease in deaths from hypertensive disease. Perhaps not entirely due to an increased level of health fitness, but occurring in that era of the development of a new interest in fitness.

There is now an American Association and Fitness Directory for Business and Industry because of the growing awareness of the importance of physical fitness to business.

A recent study was carried out between two insurance companies, one of which was on a physical fitness program. The employee turnover rate dropped by 15% and absenteeism by 22% in the company stressing physical fitness. Some companies give bonuses to their employees for health fitness programs. One company, for example, offers employees $250.00 to stop smoking. If an employee loses weight, he or she earns $5.00 for each pound which is lost. However, there is a rider. If they gain back the lost weight, they must pay back $10.00 a pound. Some companies allow employees time off for several hours a week so they can work out in the company gym. This is a good plan, providing that it is not geared only to the executive level and that it is located on the plant property. (Not at some country club thirty miles from the plant.)

At the University of Arizona we have an Adult Fitness Program as well as a Cardiac Rehabilitation Program. As far as hard scientific data is concerned there is no evidence that rehabilitation, which includes a physical fitness program, after a heart attack will increase life expectancy, but it will diminish the chance of further heart attacks. A recent study on fitness levels demonstrated that those with a very low level of fitness weighed more, their body fat, trigylcerides and blood pressures were higher. Their H.D.L. levels and their lung functions were lower. *Sports Illustrated* recently published an article in which they stated that the action in fitness has been moved from health gains to profit-making and that observation rather than participation is the current trend. They felt there were many physical fitness centers (aerobics) springing up which were really not truly orientated towards improving health but to pure profit making. While this may in part be true, a number of these fitness centers are truly "healthful."

Unfortunately, there is still a large number of physicians who look upon athletics and fitness as unnecessary and harmful. The athlete who visits such a doctor with an overuse syndrome is told "You ought to cut out all that nonsense of athletics," or, "I want you to stop what you are doing for two months." Most athletes will, of course, be much more apt to give up their physician than give up their sport. The letters in the name of a well-known athletic equipment supplier have been used by detractors of fitness to describe athletes as "**A**thletically **D**etermined **I**diots **D**edicated to **A**dvertising **S**uperiority."

As participant involvement increases in sports, so does medical involvement. By that I imply that we, as physicians, trainers, physical educators, physiologists, or therapists should have some input into the sport governing bodies. Some advances have already been made in football by bringing about rule changes for piling on, roughing and blocking, in an attempt to make sports safer for the participant and minimize injuries in this collision sport.

There are a number of trends in sports medicine which are taking place at the present time. For example, athletes are starting in sports at an earlier and earlier age. Ballet and gymnastics are two sports where the participants start at a very young age. Runners are starting earlier in life, as are organized team sports such as baseball. Early endurance training delays the age of onset of menstruation in the female. In a group of female athletes who started their training before the age of eight, the average age of onset of the menarche was delayed until over the age of 15 years. (The average age of onset of the menses in the nonendurance female athlete is 12.3 years.) There are at present a number of studies investigating anorexia nervosa and its apparent relationship to endurance training.

Another trend is that the injury rate, as well as the severity of the injuries, seems to be increasing. Sports can be classified according to the risks and whether they are nonstrenuous, strenuous, contact, or noncontact. Of course, even nonstrenuous, noncontact sports can become contact sports if control is lost (for example, hang-gliding or skiing).

Another trend is the increasing incidence of overuse. A number of studies have been carried out on runners and it is estimated that over 50% of their sport-related injuries are due to training errors. In other words, overuse, such as excessive mileage, running on hard surfaces and hills, improper shoes, rapid changes in routine, or failure to stretch tight structures prior to competing (the warm-up). These are some of the questions the physician should ask the patient who comes in for advice concerning their sport related injury. Most runners will keep a daily log of their training habits which will often help point to the cause of an injury.

A recent newspaper article describes a five-year-old who ran in a marathon. I think we would all agree that this is a little early to participate in such a strenuous endurance contest. The marathon is bad enough, but imagine the training in preparation for the event! We don't know as yet what effect endurance training will have on the growth centers of bone of young people.

Another unfortunate trend is that sports which do not produce big bucks are being phased out. *Sports Illustrated* also focused on this area in its recent expose on fitness and sport. At the University of Arizona we have phased out waterpolo, wrestling, gymnastics, and field hockey. None of these sports were financially self-supporting so each was dropped by the athletic department.

The trend is toward professionalism. By definition, an amateur is one who takes part in sports as a pastime rather than as a profession. Unfortunately, what has happened is that the professionalism has become associated with excellence, and amateurism has become associated with mediocracy. Yet our best athletes in the world are amateurs, such as decathalon athletes, long distance runners and cyclists, swimmers or cross-country skiers. None of these sports are truly professional, because there is little potential for spectator profit in these areas.

Today's sports spectators have turned to professionalism and have been sold the philosophy that failure is unacceptable in today's society. At every professional sporting event today the chant is "We're No. 1, we're No. 1." You don't hear anybody saying, "We're No. 2, or 3, or 9." You have to be No. 1 in today's society to achieve success.

Another trend in modern sport is the increased use of drugs or ergogenic aids. This quote from the International Olympic Committee's book on doping explains why our athletes are turning to drugs.

"The merciless rigor of modern competitive sport, especially on the international level, the glory of victory, and the growing social and economic reward of sporting success—in no way any longer related to reality—increasingly force athletes to improve their performance by any means available."

This is the most serious medical problem in athletics today. An athlete will literally try anything to improve his or her performance. He or she may earn $600,000 for playing a sport for a few months, but can earn another $300,000 from endorsements and public appearances. Professional sports is big business. In the 1983 Super Bowl, the T.V. advertising cost $12,000.00 a second!

The main indications normally for the use of drugs are disease or deficiency states. Athletes use them in an attempt to improve upon performance beyond their physiological level or for recreation purposes. Alcohol and cocaine are the two current "recreational" drugs abused by sportspersons. Indeed, some professional athletes are now acting as dealers for drugs because of the immense profit and to help support their habit. Unfortunately, the dependent athlete may be susceptible to pressure from gambling interests. Dependence and addiction to stimulants among our top professional athletes are now common sports media news. The drugs are taken in an attempt to increase strength and endurance and to thereby improve upon performance. They are also taken to decrease pain and reduce anxiety. For example, athletes in shooting events are taking beta-blockers to delay anxiety and increase concentration.

The athlete's physiological warning system may be impeded with stimulants allowing the taker to go beyond the point of exhaustion. Collapse and even death may occur. Stimulants allow the athlete to run the red light. The athlete feels the drug gives them the extra edge (the racer's edge) that he or she is looking for, to theoretically improve upon their performance. They also, unfortunately, make the athlete more aggressive and hostile and with an increased reaction time rendering them more prone to injury.

According to lay reports the use of cocaine would appear to be widespread in the sporting society. It is a powerful stimulant which was one of the first local anesthetics delivered and is still being used by the medical profession. Professional sports have been called "chemical warfare" by the press. Some writers have gone as far as saying "They ought to give the medals to the drug houses."

What about the handicapped athlete, that individual who has a single organ disability, e.g., one eye, one kidney, one testicle, one lung, or a hearing loss in one ear? Here again, lawsuits may result against the team physician who disallows an individual to compete with such a disability. A legal principle was set by H.E.W. in 1973 stating that an athlete with such disability, who is otherwise qualified, cannot legally be kept off a high school team. Obviously, the involved physician should voice his or her objection in writing and have the involved athlete or parents sign a legal waiver.

The trend now is toward full female participation in sports but this is a relatively recent innovation. Women first took part in the Olympics in 1900 when token golfers and tennis players were allowed to compete. (They had been barred even as spectators in the original Olympics because the male contestants performed in the nude.) There is no question that the male generally outperforms the female, in sporting events. This is not a chauvinistic statement but is based on sound scientific biological fact. The female matures earlier, she is smaller and has less muscle mass. The female is more flexible, has a higher fat content and a different fat distribution. She has a lower hemoglobin level and a lower cardiac output. These differences start to appear after the age of eight or nine years. If we take a group of young males and females eight years of age, both groups can throw a ball as far, kick it as far, run as fast, or jump as far. It is only after that age that the performance is altered because of hormonal changes. Prejudice, misconception, ignorance, and unavailability of coaching and equipment have unfortunately mitigated against the female athlete from developing her potential in the past.

Now, to sum up the present era in sports medicine. The medical care initially was largely left to the self-educated trainer with an occasional physician in attendance, the emphasis being on treatment alone. Both of these health professionals have gained knowledge and expertise in sports medicine with the passage of time. The trainer now is the key person in organized team sports. It is he or she who has first contact with the injured athlete but they must be responsible to a designated physician. The physician should have a documented preseasonal medical exam on each athlete and adequate medical records must be kept at all times. A suitable emergency kit should be on hand and a telephone with instant paramedical availability. The trainer, originally looked upon as basically an equipment manager and water bucket carrier, is now a vital cog in the sophisticated medical team. No longer is the team physician looked down upon as merely a "jock doc." Sports medicine has come a long way baby!

Exercise physiology is another branch of medicine that has made tremendous strides in the past fifteen to twenty years. There have been important discoveries in basic science, nutrition, training and coaching, all leading to improved performance and health. The importance of rehabilitation in getting the athlete back into competition is now being recognized. We are now vitally concerned about prevention, treatment and performance rather than treatment alone.

We now have the input of the coach, physician, athletic therapist or trainer and the sports scientist. Then, hovering in the background, we have referees who play an indirect role in sports medicine. We have legal counsel and sport governing bodies and, of course, the parents of the involved athlete.

Now what about the future of sports medicine? Front and center is the athlete and he or she has tremendous pressures being exerted from all sides. The athlete's main concern is, of course, performance. We are all familiar with what's happening to world records and the tremendous increases in performance over the past few years. A world record used to be broken by minutes or seconds and is now being broken by tenths or hundredths of a second. At the recent Commonwealth Games in Australia there were five medals lost on the swimming relay teams because of a new electronic timer on the take-off board. No longer is the camera the prime official recording device. The competitors in these relays took off just a few hundredths of a second early and the team was disqualified. Can the performance of the human body possibly keep up with the technological advances being made?

We should strive in the future for a combination of clinical medicine with availability of specialist consultation at all levels of expertise. It would seem that sports medicine at present is in the hands of the trained specialist, while in the past the untrained generalists fulfilled this role. There are, at this time, very few full time sports physicians in this country. I believe that in the future we should find generalists for team physicians trained in sports medicine as specialist in that particular field.

In the past, treatment was the prime factor in sports medicine. At the present time treatment, prevention and performance are being stressed in that order. In the future, I think that performance, prevention and treatment will be the order of priority. With prevention, hopefully, less treatment will be required.

Why are the Eastern bloc countries so far ahead of us in this field? They have full time trainers, physical educators, physiologists and physicians working with the same athletes all year round. They select their athletes at the age of seven or eight and allocate the young athletes to their particular sport at that age. They start training and conditioning them, emotionally and physically at a very early age. Are they producing athletic machines? I don't believe the Eastern Bloc countries are anywhere near us in scientific research, but they are not far behind. Motivation, discipline and national pride are perhaps their main driving forces. After all, the only way to get out of Russia is to be a ballet dancer, an athlete or an astronaut and in the last case, you are made to return to your point of origin on command.

John Dryden, an English poet who lived in the seventeenth century, probably best summarized the role of health through exercise:

"Better to hunt in fields, for health unbought,
Than fee the doctor for a nauseous draught.
The wise for cure on exercise depend;
God never made his work, for man to mend."

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"Charles and Beatrice"

Parents are funny. You learn a lot from them during your formative years, and then you go off on your own only to discover 20 to 30 years down the line that they still have something to offer. Case in point, one of my semimonthly phone conversations long distance to Miami Beach with my parents, Charles and Beatrice. This twosome recently celebrated their 50th Wedding Anniversary and as such know each other pretty well. Having both been born "overseas" (a euphemism for "Europe"), my parents never fully learned how to speak English, but have made valiant efforts through the years to at least try. In the course of this phone conversation, my Father asked me "Aren't you going to ask me how I feel?" (This is a question I always avoid for it usually prolongs the phone conversation at least 20 minutes). "Sure, Dad. How are you feeling?" His response, "Don't ask!" "I went to the urologist last week and he did a cystoscopy." Before I could utter a word, from the extension in the bedroom came Beatrice's response, "Marshall, don't listen to your Father, he had a stenoscopy, not a cystoscopy." "Charlie, it was a stenocopy, Marshall, you know how he doesn't understand big words." Hanging on for dear breath 2000 miles away, I continued to listen to this conversation. Finally, Charles ended this harangue by saying, "Beatrice, you don't know what you're talking about, a stenoscopy is when they stick it in your ear!"

The moral of this story is that we need to communicate in words which patients can understand and can transmit to friends and relatives when describing their illness. Although we take for granted much of our vocabulary and use it rather indiscriminately when discussing medical problems with patients, we need to become cognizant of the fact that patients do not have our educational background and need things explained in terms which have relevance to their lives. It's a lot easier for a car mechanic to understand that there is something wrong with the carburetor so that the car is racing at 100 miles an hour and we need to slow it down, than to say that "Your wife has thyrotoxicosis and has hyperthyroidism and we need to treat her with propylthiouracil."

I guess I will continue to make those semimonthly calls to Charles and Beatrice. You never know what you can learn.

Marshall B. Block
Editor

Communication

Recent developments have convinced me more than ever before that our lines of communications should be open at all times. Lack of knowledge or ignorance of activities of the Arizona Medical Association could be the roots of rumblings in the membership. However, for communication to be effective, it should be a two-way system. Ever since I have been involved in organized medicine in our state, just as a dues-paying member and gradually ascending the ladder of leadership until my election as your President, I have felt that the Association has tried to disseminate important information to its members in many ways. Unfortunately, many members don't bother to open the envelope from ArMA and it goes directly in the wastebasket. I must submit to you that this lack of information or knowledge is partly the fault of some members who are not interested in reading very timely and important pieces of information.

ArMA sends to its members the following brief, concise, informative publications:

A. Medical Memos
B. FYI (For Your Information)
C. Arizona Medicine
D. Legislative Beat

Those of us on the Board of Directors and Executive Committee are always cognizant of the usefulness of open lines of communication. Please let us know of your concerns, problems, and suggestions. We love to hear from you. I am available to meet with any group of physicians or individual member at almost any time and have a mutual exchange of ideas of how we can continue to deliver the highest quality of medical care to our patients at reasonable costs. We can discuss present and potential problems from within and without the profession and our relations with hospitals, government and legislators.

It is our mutual interest and well being that we keep our medical associations strong and resist change affecting our practice and the delivery of health care to our patients. It is in unity and strength that we can all continue to present our views to all that are willing to listen; that the physicians in Arizona are interested in continuing to deliver the highest quality of medical care to our patients at reasonable costs.

Please let me know how I can serve you to the best of my ability and HAVE A NICE DAY.

Neopito L. Robles, M.D.
President
Arizona Medical Association

A New View of Underwriting Review

The Arizona Medical Association's Underwriting Review Committee enjoys a unique relationship with the Mutual Insurance Company of Arizona (MICA). MICA is the only professional liability insurer in the state actively utilizing physician participation in the evaluation of risk posed by applicants for malpractice insurance.

Historically, MICA was the only source of professional liability insurance in Arizona during 1976 and was required by Arizona statute to insure all providers of health care between 1976 and October 1, 1980. The company has continued that tradition of providing coverage and, with the Underwriting Review Committee's assistance, recognized differences in professional liability risk by medical specialty, by practice patterns, and by geographic location. The ArMA Underwriting Review Committee utilizes a large number of physicians who devote considerable time and sincere effort, thus applicants for insurance with MICA are given an objective, thorough, and medically qualified review.

The reviewers are practicing physicians who recognize the difference between cautious reporting and hazardous practice. They also acknowledge our need for insuring against the unavoidable. The law expects perfection or demands compensation for "negligence." None of us is perfect, that's why we buy insurance.

In 1976, the commercial carriers had withdrawn from the market in Arizona. We faced a crisis of insurance availability. MICA filled that void. Today, inflation, increased frequency of claims, and larger settlements and awards are driving all insurance premiums up. In 1984, the crisis may be one of insurance affordability.

Recognizing this problem, MICA initiated and offered risk management seminars to policyholders in an attempt to combat claims and losses (but less than 50% of us have attended!). MICA utilizes the most competent specialists in negotiations and defense work, encourages early reporting of potential claims and provides an Emergency Medical Fund to diffuse situations that might explode into malpractice suits.

In spite of the above measures carried out by MICA, we need to do more if we hope to combat the trend toward marked increases in frequency and severity of claims. MICA had 884 new claims in 1982—88 more than in 1981! Individually, we should attend risk management seminars and carry back to our specialty meetings the problems brought to our attention. We must not only continue to practice good medicine but document it carefully. We must seek appropriate consultations and obtain fully informed consent for treatment. Appropriate tort reforms and statutory relief must be sought and fought for in the Arizona legislature.

MICA will continue to look for and insure standard risks. The Underwriting Review Committee will sharpen its focus seeking "preferred" risks—applicants who document their quality medical practice, who attend risk management seminars, who cooperate with the MICA claims department and those who demonstrate sound judgment in dealing with patients. The committee recognizes its responsibility to the individual physician applicant but more so to the large majority of policyholders who practice quality medicine and who feel that quality practice patterns should be reflected in their insurance premiums. MICA premiums will be less likely to increase if we become more selective and insure only the best risks. MICA currently has $67.8 million incurred liability in outstanding claims and payments.

The Underwriting Review Committee will attempt to identify those colleagues most likely to succeed in avoiding adverse claim experience. Our recommendations to MICA will be to retain the "preferred risks" and to reject the poor risks. We have a peer review mechanism to identify the best bets and the worst risks; we intend to use it.

Neil O. Ward, M.D., Chairman
Underwriting Review Committee
Arizona Medical Association

Therapeutic Plasmapheresis:

A Modern Successor to the Leech?

Plasmapheresis or plasma exchange i one of a group of techniques, collectively referred to as "hemapheresis," whereby a person's blood is modified in passage through an extracorporeal circuit. In such procedures, a blood component is usually removed, e.g., by centrifugation, and may or may not be replaced by a substitute before the blood is returned to the subject. Plasmapheresis itself is the removal of plasma from whole blood with the substitution of albumin and electrolyte solutions or of normal donor plasma. Thanks to the development of efficient blood cell separators in recent years, such techniques are now used clinicall in a wide variety of disorders. Indeed, the application of plasmapheresis in diseases resistant to conventional therapy reached such bandwagon proportions that some were calling it the modern successor to the leech. To make things worse, most trials of plasmapheresis have been without controls, and reports in the medical literature are largely anecdotal.

Lately, however, things have improved. Controlled trials are under way in many centers, and some have already been completed. Instead of a vague rationale rather like the idea of removing bad humors or of doing a procedure simply because it can be done, plasmapheresis has now achieve a more scientific basis. The object of the procedure must be to remove som known harmful component with the plasma. Usually this is an abnormal protein, antigen, antibody, or immune complex. Plasmapheresis is therefore a ype of immuno-surgery of the blood. Vithout a demonstrable element to emove, the procedure becomes either xperimental or unscientific.

Plasmapheresis, even when ppropriately applied, is usually a eatment of last resort, i.e., it is used hen conventional therapy either fails r causes unacceptable side-effects. To e effective, the procedure usually has be applied repeatedly and in ufficient quantity, e.g., removal of one r more plasma volumes at a time.

Plasmapheresis has been shown to be easonably effective in selected cases of yperviscosity syndrome (of whatever ause), myasthenia gravis, oodpasture's syndrome, thrombotic rombocytopenic purpura, and nmune complex disease, such as stemic lupus erythematosus. Its effects e either controversial or currently nder investigation in such conditions renal transplant rejection, Rh nmunization of pregnancy, utoimmune thrombocytopenic urpura, Guillain-Barre syndrome, and ancer. Plasmapheresis has recently een shown to be ineffective in eumatoid arthritis, and is probably effective in multiple sclerosis. In both ese latter diseases, modified emapheresis with removal of eripheral blood lymphocytes is under vestigation.

Gross replacement of plasma is a ude procedure and will probably in e end be replaced by the developing chniques of extracorporeal immuno- sorption. This and other delicate rms of selective removal of blood actions permit return of the patient's wn modified plasma, thus greatly ducing costs.

Plasmapheresis in its present form is a chnically difficult procedure, using mplex equipment, costly disposable asticware, and requiring replacement plasma with albumin or normal asma. All these things make it pensive. For most patients, it is a latively innocuous procedure, but it oes involve problems of repeated scular access, anticoagulation, and verse reactions. Sporadic deaths have curred, mostly caused by cardiac rhythmia or acute pulmonary edema. with any other manipulative erapeutic intervention, the physician ust consider the possible harmful fects of plasmapheresis and balance em against its anticipated benefits. ecause of the controversies and nknown aspects of hemapheresis, ese new approaches are receiving uch attention at the Arizona Health iences Center. Clearly it is an portant area for research. It is also an portant area for education. Medical ience often eventually finds a rationale for what was once quackery or superstition, and now even the barber-surgeon's leech is being revisited in modern investigations.

Douglas W. Huestis, M.D.
Professor of Pathology

Louis J. Kettel, M.D., Dean
College of Medicine

Arizona Medicine

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The Law: It's Impact on Medical Practice

Breach of Contract and the Yellow Pages

The telephone company's business directory, commonly known as the *Yellow Pages* is one source patients use to find a physician. Physicians contract with the telephone company to have their names and specialties listed in the *Yellow Pages* . They pay the telephone company for this service. If through some error the telephone company omits a listing or makes a mistake in a listing a physician may be able to recover for breach of contract. In this type of suit, however, the physician may have trouble proving damages.

Errors in Listings

One recent suit in Florida (*Southern Bell Telephone and Telegraph Company versus Kaminester*, 400 South 2nd 804, Florida, 1981) was filed by a dermatologist's professional corporation because his address was incorrectly listed in the *Yellow Pages*. The dermatologist's name, specialty and telephone number were listed correctly, however. The jury awarded $92,929 in damages. On appeal, the court reversed the decision. The appellate court found that the trial court had erred in admitting patient interview sheets into evidence. Those sheets were used by the corporation's accountant to calculate the number of patients who would have been referred if the directory had been correct. The calculated 144 lost patients were assigned the same percentage of disease categories as the previous year's referrals.

Lost profits were based on the projected treatments and length of treatment for each "lost" patient. The trial judge had granted a protective order preventing the telephone company from obtaining copies of the patient interview sheets on grounds of physician-patient privilege. The judge later reversed himself and granted permission to the telephone company to view the sheets the evening after the first day of trial. The appellate court said that the court erred in not granting the telephone company sufficient time to defend against the reliability of the sheets.

A second reversible error was to the trial court's failure to deduct the compensation paid to the dermatologist in computing net profits, the appellate court said. The general rule in computing net profits of a corporation was to deduct the compensation of its officers and employees, and there was no reason to alter the rule for a professional corporation, the court concluded.

In another breach of contract suit (*Garrison versus Pacific Northwest Bell*, 608 P.2d 1206, Ore., 1980), a psychiatrist sued because the *Yellow Pages* erroneously listed her as an osteopath. The psychiatrist had an M.D. degree and specialized in child psychiatry. She ordered directory listings in the *Yellow Pages* and *White Pages*. When the 1977 directories were issued, the physician was incorrectly listed in the *White Pages* as an osteopath and her *Yellow Pages* listing appeared in the section in which osteopaths were listed. The physician sought $55,000 treble damages, and $5,000 in attorney's fees. A trial court granted summary judgment for the telephone company, and the physician appealed.

The appellate court affirmed the decision. The court found that the physician did not have a private right of action under the statute governing the telephone company. This statute provided that every public utility was required to furnish adequate service. The physician contended that the telephone company failed to furnish her adequate services in violation of the statute and that this gave rise to a private cause of action. The court disagreed.

The court also disagreed with the physician's contention that the Commissioner's attempt through rulemaking to limit recovery for directory errors exceeded his statutory authority. The Public Utility Commissioner's authorization to limit the telephone company's liability for erroneous listings was at the core of his authority to set adequate service levels and establish reasonable rates, the court said. The Commissioner's regulation limiting the telephone company's liability was reasonable since it did not shelter the company from the liability for gross negligence, the court said.

So long as the telephone company trained its employees to recognize that there was a difference between the categories of physicians, the company's failure to train them in the details of physicians' training and job functions was not gross negligence, the court added.

Omission of Listings

A Louisiana chiropractor was awarded $1,500 in damages in his suit.(*Butcher versus South Central Bell Telephone Company*, 398 South 2d 197, La., 1981) against the telephone company for omission of a listing in the *Yellow Pages*. The omitted listing was one of ten listings the chiropractor had contracted with the telephone company to include in its 1978 directory. The trial court found that th telephone company had breached its contract, and the appellate court affirmed the decision. The appellate court disagreed with the chiropractor that his award should be increased to $26,000.

Liability Limited By Contract

An Ohio decision (*Berjian versus Ohio Bell Telephone Company*, 375 N.E. 2nd 410, Ohio, 1978) discussed a liability clause in the directory advertising agreement.

An osteopathic surgeon sought a special listing in the *Yellow Pages* of two telephone directories for 1972, 19 and 1974. His name was listed properl in one directory but not in the other. In the 1972-1973 directory, his name was not listed at all in the *Yellow Page* In the 1973-1974 directory, his name was improperly listed in the section "Physicians and Surgeons M.D." However, his name was properly liste in the *White Pages* of both directories

The osteopath filed suit against the telephone company for negligence an breach of contract. A trial court foun in favor of the telephone company o the basis of a limitation of liability clause in the directory advertising agreement. An appellate court reversed, holding that the limitation clause was unconscionable.

Reversing the appellate court's decision, the Supreme Court said that the clause limiting the telephone company's liability to the cost of the listing was enforceable. It was not voi as against public policy, nor was there any willful or wanton misconduct by the telephone company for which it would be liable, the court said.

The telephone company was also held liable in a Tennessee suit (*Affiliated Professional Services versus South Central Bell Telephone Company*, 606 S.W. 2nd 671, Tennesse 1980) by an association of psychologist and social workers. The liability was limited to the cost of the listing, however. The association alleged negligence and breach of contract when its listing was omitted from the *Yellow Pages*.

The telephone company relied on language in the printed contract limiting its liability for errors or omissions to the cost of the advertisement. Both the trail court an the appellate court upheld the exculpatory clause, and the Supreme Court agreed. The clause was not contrary to public policy nor prohibited by a statute in the state. Other state courts have also upheld the validity of he clause, the court said.

Another suit (*Southwestern Bell Telephone Company versus Wilks*, 601 S.W. 2nd 855, Arkansas, 1980) in which iability was limited by a contract was decided by the Arkansas Supreme Court. In this case, an optometrist sued hat telephone company because his name was omitted from the "Optometrists O.D." section of the *Yellow Pages*. Although his home and business numbers were listed in the *White Pages*, there was no reference to his being an optometrist. Seeking $10,000 for past and prospective business lost because of the ommission, he optometrist contended that he had ost patients and income to the optometrists who were listed in the *Yellow Pages*.

The company admitted the omission. However, it contended that the optometrist could only recover damages limited to the cost of his business telephone service for the one-year period covered by the directory, which was $169.80. The court found hat the limit violated a section of the state constitution providing that no law hould limit the amount to be ecovered for injuries to persons or property. The jury awarded the optometrist a judgment of $500.

On appeal, the court said that the elephone company, as a public utility, had to file the terms and conditions of ts basic service contract with the Public Service Commission, which determined whether they were reasonable and in he public interest. The Commission had accepted the terms and conditions, imiting liability for directory errors to he amount paid for service during the period covered by the directory.

The appellate court disagreed with he trial court finding that the type of njury sustained by the optometrist, damage to his earnings from his practice, was not the type of injury contemplated by the constitution. The court felt that injuries to persons or property meant physical injuries to the person or physical damage to the property. Reversing the trial court's uling, the appellate court sent the case back for further proceedings.

Punitive Damages

A Florida physician whose name was omitted from a telephone company's *Yellow Pages* listing was entitled to have a jury consider the question of punitive damages (*Hanft versus Southern Bell Telephone and Telegraph Company*, 402 South 2nd 453, Fla., 981). The physician was omitted from the listing in the gynecology and obstetrics subheading of the physicians' section for two successive years despite his request for a listing. He brought an action against the telephone company, seeking compensatory and punitive damages.

The company asserted a defense of settlement, compromise, and release, contending that the physician had accepted two years of free telephone service in discharge of his grievance. At the trial, evidence was conflicting as to whether a settlement had been reached or whether the physician had been billed and had paid for the telephone service.

The physician did not proceed with his claim for compensatory damages because he was not able to prove loss of earnings as specifically as required. He did maintain that he was entitled to at least nominal damages. The trial court directed a verdict for the telephone company on the grounds of comprise and settlement.

On appeal, the telephone company conceded that there was an invasion of the physician's legal rights that would support an award of nominal damages. The court found that the physician was at least entitled to have the jury consider the question of nominal damages and that it was error to direct a verdict for the telephone company.

Although punitive damages are not usually recoverable for breach of contract, the court said, there is an exception when the breach is attended by gross negligence sufficient to amount to an independent wrongdoing. The court said that gross negligence could be imputed from the entire want of care or want of slight care. Reversing the lower court's judgment, the appellate court sent the case back for a new trial.

Generally speaking, it can be concluded from these cases that a physician may have several causes of action against the telephone company if it incorrectly lists him in the *Yellow Pages* or omits his listing from the *Yellow Pages*. Whether he claims breach of contract or negligence, the terms of the contract, state regulations, and other factors will affect the amount of damages he is able to recover for lost business.

Nancy Lou Watson
Executive Editor
The Citation

Briefly Noted

Richard W. Abbuhl, M.D., Phoenix, addressed respiratory technicians attending the recent annual meeting of the Arizona Society of Respiratory Therapy. Dr. Abbuhl, an emergency room physician and attorney, discussed the topic, "What Constitutes Malpractice and How to Avoid It."

Robert P. Bevan, M.D., and **Fred D. Fingerhut, M.D.**, Phoenix, were guest speakers at a seminar on Premenstrual Syndrome during the Broadway Southwest's Working Partners Week. **Judith Engelman, M.D.**, Phoenix, spoke on "Sex, Stress, and the Working Woman" during the same series.

Kenneth B. Desser, M.D., Phoenix, has been appointed Clinical Associate Professor of Internal Medicine at the University of Arizona.

Gerald F. Giordano, Tucson, was honored recently by the 88-CRIME board of directors for his help in convicting a self-proclaimed cancer specialist of fraud. Dr. Giordano was cited for his willingness to aid in the investigation and provide expert testimony during the trial.

Alan L. Gordon, M.D., has been appointed to the Residency Review Committee in Internal Medicine. The twelve-member national committee sets the standards for postgraduate training in Internal Medicine and is charged with accrediting all residency and fellowship programs in Internal Medicine and its subspecialties.

Robert G. Harmon, M.D., director of Public Health, Maricopa County Department of Health Services, has been elected president of the National Association of County Health Officials (NACHO). The association represents more than 1,000 county health departments and 2,100 counties nationwide.

What They're Saying

"Rule Number 1 is, don't sweat the small stuff.
Rule Number 2 is, it's all small stuff.

And if you can't fight and you can't flee, flow."

University of Nebraska
Cardiologist Robert Eliot

Anthony Hedley, M.D., Phoenix, addressed a Sun City audience at a recent arthritis seminar presented by Valley View Community Hospital.

Walter J. Nieri, M.D., Phoenix, spoke on "Aging" at the September Health Talk Forum presented by the Arizona Medical Association in cooperation with Blue Cross/Blue Shield of Arizona.

Laurance B. Nilsen, M.D., Phoenix, was a featured speaker at a Cost Containment Seminar presented for community leaders by the James Company of Phoenix. Dr. Nilsen spoke on the "Role of Physicians in Containing Costs."

ArMA's highly successful Current Perspectives series began in October with a presentation entitled "Hard Choices: Ethical Decision-Making in Medicine" cochaired by **Drs. Scott Chisholm** and **H. Belton P. Meyer**, of Phoenix. In November, the second Current Prespectives Program, "Diseases of Arizona, Including Cocci" was presented at the Pima County Medical Society Building under the direction of program chairman, **Wilber C. Voss, M.D.**, Tucson.

Current Perspectives I Co-chairmen Drs. H. Belton P. Meyer (left) and Scott Chisholm (right) with guest speakers Leslie Rothenberg, Norman Fost, and Allen Buchanan

The Arizona Medical Association welcomes the following new members:

Cochise

Andrew J. Slaski, M.D.
Pediatrics
1231 East Fry, Sierra Vista
Medical Academy of Lodz,
Lodz, Poland—1963

Maricopa

Rao S. Bhatraju, M.D.
General and Vascular Surgery
3201 West Peoria Avenue,
Suite D-807, Phoenix
Guntur Medical College,
Guntur, India—1973
Manuel J. Chee, M.D.
General Surgery
7525 East Broadway Road, Suite 1, Mesa
Faculty Medicine de la Universidad
Autonoma de Guadalajara—1975
David L. Cherny, M.D.
Orthopedic Surgery
550 West Thomas, No. 116-B, Phoenix
University of California, Davis—1976
Russell Chick, M.D
Orthopedic Surgery
Doctors Medical Plaza South
2720 North 20th Street, No. 425, Phoenix
University of Arizona—1973
Mariam Cohen, M.D.
Psychiatry
4810 East Andora Drive, Scottsdale
Hahnemann Medical College,
Philadelphia—1978
Rosalie E. Deckert, M.D.
Internal Medicine
1728 West Glendale, Phoenix
University of Missouri,
Columbia—1973
John P. Elliott, M.D.
Obstetrics and Gynecology
1111 East McDowell Road, Phoenix
University of Colorado, Denver—1972
Kirit P. Gosalia, M.D.
Cardiovascular Diseases
and Internal Medicine
5422 West Thunderbird Road, Glendale
Medical College, Baroda, India—1970
M. Lance Holemon, M.D.
Obstetrics and Gynecology
10599 North Tatum, No. F-151,
Paradise Valley
University of Louisville,
Kentucky—1979
Paul W. LaPrade, Jr., M.D.
Neurological Surgery
6036 North 19th Avenue,
No. 210, Phoenix
University of Arizona—1976

Robert E. Leber, M.D.
General Surgery
1500 South Dobson, No. 312, Mesa
Hahnemann Medical College,
Philadelphia—1961
David R. Lersch, M.D.
Pediatrics
333 East Virginia, Phoenix
University of Arizona—1978
Jack Malkoff, M.D.
Otorhinolaryngology
926 East McDowell Road, Phoenix
Ohio State University, Columbus—1951
Jess A. Miller, M.D.
Psychiatry
7351 East Osborn Road, Scottsdale
New Jersey Medical School—1977

Participants at the AMPAC/ArMPA Political Education Seminar at Pim County Medical Society

AMPAC/ArMPAC Seminar attendee (back to front) Drs. Lee Schultz and Tom Foreman and Teddy Foreman

Walter J. Nieri, M.D., guest speaker at the September "Health Talk" program

Judith Engelman, M.D.

Warren Nesbit, M.D.
Internal Medicine
2547 West Cactus Road, No. 209, Phoenix
Wayne State University—1958
William S. Robertson, M.D.
Cardiovascular Diseases and Internal Medicine
3099 Civic Center Plaza, Scottsdale
University of Colorado, Denver—1975
Raymond F. Shamos, M.D.
General Surgery
550 West Thomas Road, No. 221-B, Phoenix
Witwatersrand, Johannesburg, South Africa—1971
Amy A. Silverthorn, M.D.
Internal Medicine and Pulmonary Diseases
550 West Thomas Road, Suite 234-D, Phoenix
Baylor College of Medicine, Houston—1977
Sharonelle Simmons, M.D.
Family Practice
7354 East Fourth Street, Scottsdale
University of Nebraska, Omaha—1979

Pima

L. David Rhea, M.D.
Obstetrics and Gynecology
P. O. Box 40550, Tucson
McGill University Faculty of Medicine
Montreal, Canada—1956

Pinal

Rekha V. Shah, M.D.
Internal Medicine and Gastroenterology
302 East Cottonwood Lane, Casa Grande
Seth G. S. Medical College
University of Bombay, India—1975
Wayne C. Zwick, M.D.
Family Practice
P. O. Box 1231, Casa Grande
Tulane University—1977

New Service Members

Maricopa

Frank L. Jones, M.D.
Ophthalmology
Phoenix Indian Medical Center
4212 North 16th Street, Phoenix
Louisiana State University, School of Medicine
New Orleans—1961
Mitchell H. Pincus, M.D.
General Practice and Aerospace Medicine
Luke Air Force Base
3524 West Dunlap, No. 127, Phoenix
Southern Florida College of Medicine, Tampa—1981

Yavapai

George O. Reves, M.D.
General Practice
V. A. Medical Center
1140 Country Club Drive, Prescott
California College of Medicine—1962

New Resident Members

Maricopa

Steven G. Dulla, M.D.
Psychiatry
Maricopa County Medical Center
Universidad Central del Este
Dominican Republic—1982
Jeffrey S. Gitt, D.O.
Unspecified
Phoenix General Hospital
College of Osteopathic Medicine of the Pacific
Pomona, California—1983
David G. Stewart, M.D.
Family Practice
Good Samaritan Medical Center
Medical College of Virginia, Richmond—1981
Terry C. Turner, M.D.
Family Practice
Scottsdale Memorial Hospital
University of Cincinnati, College of Medicine—1976

Pima

Gerald N. Goldberg, M.D.
Dermatology and Pediatrics
University of Arizona, Tucson
S.U.N.Y. Upstate, Syracuse, New York—1978

New Student Members—University of Arizona

Jamila Champsi
Michael C. Dugan
Thomas Goodheart
Mike Hitt
Ty W. Hutchins
Brent E. Johnson
Stuart W. King
David A. Kirkman
Susan Kunesh
Richard W. Lloyd
Kim T. Long
Paul D. McKernan
Christopher L. Reardon
James N. Rogers
John L. Schaller
Lawrence Serrano
Amy Jo Thorpe-Swenson
Guy P. Van der Werf
Marcia Wissing

Dr. Meyer opens the legislative consultation on Arizona's "Baby Doe" bill, H.B. 2209

CONFLICTS in Medicine

OF COURSE!
WILL YOU ACCEPT MEDICARE ASSIGNMENT— I HAVEN'T ANY OTHER SOURCE OF INCOME!
PLEASE FILL OUT THESE 5 OTHER INSURANCE FORMS AND THEN MAIL ME THE CHECKS!
BERT WHITMAN

Library Talk

Librarianship as Metaphor

Bertha Almagro

When we meet people socially and identify ourselves as Librarians, the immediate reaction is one of surprise. The image evoked by our profession is based on the sterotype of the old-maid of austere countenance, hair severely combed into a bun, spectacles perched at the end of her nose, whose eternal credo is "Silence Please."

Regardless of the level of sophistication that the library profession has achieved by incorporating the latest managerial techniques and technological skills to the vast armamentaria used in the performance of our work, the discomforting image prevails, aided and abetted through portrayals in novels, films, television, and advertisement. Only a year ago, two psychiatrists, one British, the other American, came to the conclusion that banana lovers would be good librarians, since affinity for bananas indicate clumsiness, indecision, and insecurity. It was also implied that we may be afflicted by a schizoid "lonely person's" disorder, due to the fact that "librarians do not interact with others." To add insult to injury, back in the 1940's, a *Saturday Review* critic characterized a book as "about as exciting as making love to a librarian." In the novel "The Long Farewell" by Michael Inness (Perennial Library, 1958), our profession is singled out as one "conducing to a singular depravity both of intellect and morals." But it is Arthur Rimbaud, the Wunderkind of French belles lettres, who in his poem "Les Assis" ("The Seated Ones") delivers the "coup de grâce" to our profession. Rimbaud's grotesque anatomical and pathological characterization of librarians dominates the poem, and its major theme is the sexual perversion (what, again?) of our class related through medical imagery. We have "black wens," "knotted fingers" clenched tight to our femurs, and sinciputs plated with vague "cantankers" which resemble the "leprous efforescences" of old walls. Such malicious attack! Perhaps if we examine the metaphorical underpinnings of librarianship we can finally dispell our negative image. In order to do so, we might start by tracing the origins of the word

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From: University of Arizona Health Sciences Center Library, Tucson, Arizona 85724. Ms. Almagro is Assistant Librarian for Technical Services.

"Librarian." The Latin *Liber*, originally the bark of a tree, came to mean a book, whence the Latin *Librarius*, the French *Libraire*, and the English *Librarian*. Due to our close association with books, our profession has always been linked with the *book-worm* type, introverted, secretive and elitist, a cold individual that does not interact with others. Nothing could be further from the truth!

Librarianship is a metaphor for *friendship*. The figure of the withdrawn, indifferent librarian is immediately dispelled by the friendly, helpful attitude with which we meet those who seek our help. Thousands of friendly interactions take place everyday throughout the vast network of libraries dispersed across the nation.

Librarianship is a metaphor for *truth*. We are relied upon to supply valuable information which can sometimes fulfill a very important role. Take for example information that can be instrumental in deciding a malpractice suit.

Librarianship is a metaphor for *patience*. Librarians toil incessantly until the information requested is found.

Librarianship is a metaphor for *equality*. Librarians make no distinction among the people who need assistance.

Librarianship is a metaphor for *class struggle*. The librarian's position in Academia is undermined by lack of recognition from the academic community, and must struggle to be heard and approved. We must also fight constantly to improve the way the public perceives us.

Those of us who have made Librarianship our chosen profession, look upon it with the deep satisfaction and pride derived from the meaningful role it plays in our society. Librarianship is a mature activity with a sense of calling, and high educational standards. Our mission as preservers and disseminator of information began five milennia ago, when words were first recorded on clay tablets, and preserved in clay jars by our first colleagues.

Librarians are a resilient lot, and we are confident that our true image will be finally recognized. If others are only dimly aware of our role, we are positive about our own worth, deeply rooted in the sands of history.

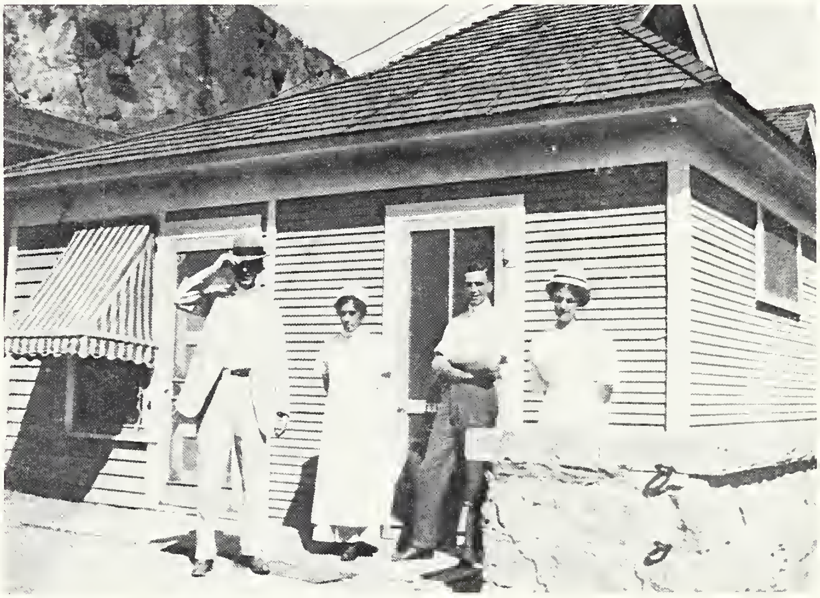
Medical History

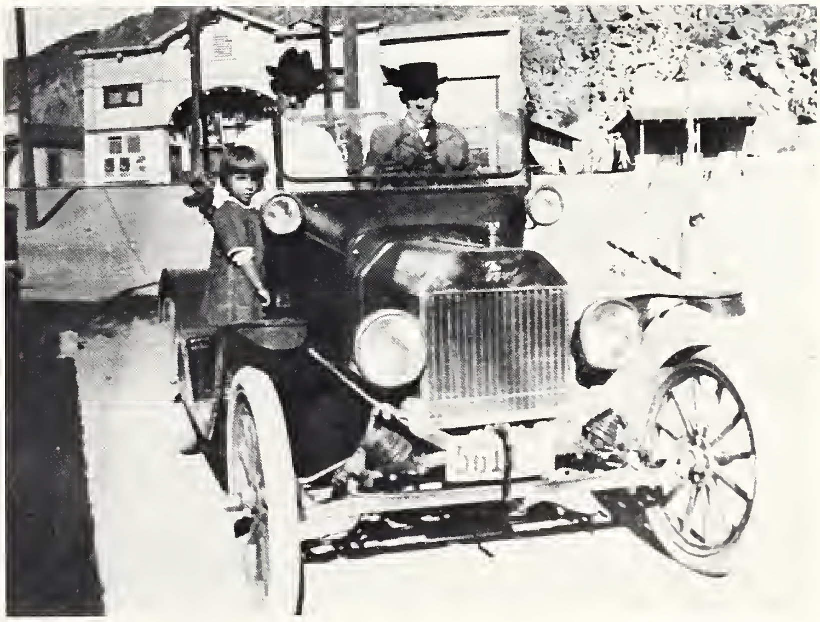
Historical Picture of the Month

John W. Kennedy, M.D.

Identify this hospital staff, and the physicians in the "Model T" with outrider.

Continued on Next Page





Historical Picture of the Month Answer

The hospital is the Shannon Hospital, Clifton, Arizona, October 1915. The staff (L. to R.) Dr. Charles E. Pearson, nurse unidentified, Dr. Thompson and nurse unidentified.

In the "Model T" (L. to R.), Dr. Pearson and Dr. Thompson. The person in the outrider was probably Dr. Pearson's daughter.

(Photos from the Arizona Historical Society)

MARK YOUR CALENDAR

For These Upcoming CURRENT PERSPECTIVES SEMINARS

Presented By
THE ARIZONA MEDICAL ASSOCIATION

December 14, 1983 Wednesday	Current Perspectives in Cerebrovascular Disease Timothy R. Harrington, M.D.—Program Chairman
January 18, 1984 Wednesday	Allergy Luis S. Tan, M.D.—Program Chairman
February 4, 1984 Saturday	Cancer Robert M. Anderson, M.D.—Program Chairman
March 21, 1984 Wednesday	Diabetes Philip Levy, M.D.—Program Chairman
April 26, 1984 Thursday	The Well Adult and Aging Earl J. Baker, M.D.—Program Director

ArMA Reports

The minutes in this section have been condensed. A complete copy will be sent to any member requesting them.

EXECUTIVE COMMITTEE

The Executive Committee met on September 23, 1983.

Mr. Don Mathis, director of the Department of Health Services updated the committee on Health Services matters. They included heavy involvement in litigation arising from loss of AHCCCS bids, seeking solutions to the health problem on the Colorado River, and recruitment of management for restructuring the Department.

The committee discussed an inquiry from Dr. Scott Chisholm relating to House of Delegates' policies and the establishment of an expiration procedure to avoid possible action by the FTC as noted to be occurring in the states of Ohio and Tennessee. It was moved and carried to invite Dr. Scott Chisholm to a subsequent meeting of the Executive Committee in order that he might more fully express his concerns regarding past and future policies adopted by ArMA's House of Delegates, as well as any proposals he may have for providing for expiration of those policies and that Mr. Robinson contact the Ohio and Tennessee Associations requesting information as to any drawbacks they have encountered in establishing a like procedure.

It was moved and carried that the September 12, 1983 correspondence and enclosures from Franklin D. Loffer, M.D. relating to the establishment of an outpatient care facility in the Village of Oak Creek by Samaritan Health Services be referred to the newly established Hospital Medical Staff Section for its discussion and appropriate action.

It was moved and carried that ArMA support, endorse, and co-sponsor with de Nova, Inc. a one day institute on domestic abuse, with emphasis on the issues of the elderly.

It was moved and carried to co-sponsor, with the Rural Health Office of the University of Arizona, an Arizona Physician's Placement Conference to be held on Saturday, November 5, 1983; but that, due to budgetary restrictions, such co-sponsorship must be without financial support.

It was moved and carried to inform Joann Gaona that the Association has no position on the decision rendered in University of Arizona Health Center vs. Superior Court.

It was moved and carried that Mary MacGuire, M.D. be requested to assume the chairmanship of ArMA's Ad Hoc Indigent Health Care Committee for the balance of the 1983-1984 term of William C. Scott, M.D.

JOINT MEETING OF ArMA and ArHA EXECUTIVE COMMITTEES

A Joint meeting of the Executive Committees of the Arizona Medical Association and the Arizona Hospital Association met on September 23, 1983.

The purpose of this meeting was to inform each group of the activities of other relating to two particular matters, i.e., the Arizona Coalition for Cost Effective Quality Health Care and the recently established ArMA Hospital Medical Staff Section.

The representatives from ArHA expressed concern about how the intended activity of the Hospital Medical Staff Section would relate to hospitals. They were informed of the activities of the Ad Hoc Committee on Hospital Services, and of the AMA's establishing a similar section. The section was formed to provide a forum for discussion of mutual problems and exchange of ideas among Arizona hospital medical staffs, a mechanism by which medical staffs could be represented within the ArMA House of Delegates and most importantly, provide a cooperative effort for attaining better, stronger relations between medical staffs, governing boards and administration.

ArHA representives updated ArMA representatives on the following items: negotiations between ArHA and the Coalition, the possibility of an initiative on October 1, and the legislative health care proposals which have been received for review or are in process of being prepared.

It was the consensus of all present that some type of ongoing liaison between the two organizations be established so that both groups could remain informed and that matters relating to health care within the state could be mutually discussed and, if possible, dealt with jointly, which would, hopefully, eliminate the need to react only in "crisis" times.

ORGANIZATIONAL MEETING OF THE HOSPITAL MEDICAL STAFF SECTION

The organizational meeting of the Hospital Medical Staff Section of the Arizona Medical Association met on September 24, 1983.

Dr. Ward welcomed the representatives and briefly commented on the events leading up to this organizational meeting, i.e., AMA's establishment of a like section on a national level, the activities of the Ad Hoc Committee on Hospital Services which promoted a resolution in ArMA's House of Delegates to establish a section within ArMA's structure which would increase physician awareness, provide a forum for discussion of mutual problems among medical staffs and give access to a policymaking body. A slide presentation relating to the need for a joint effort by physicians to control health care costs and at the same time maintain the greatest quality of care for patients was viewed by the group, following which the business portion of the meeting commenced.

A proposed set of bylaws previously distributed to the representatives for review were discussed and, following an amendment thereto, it was moved and carried that the bylaws for the Hospital Medical Staff Section of the Arizona Medical Association, Inc., attached hereto marked Exhibit "A" and by reference incorporated herein, be adopted. (The bylaws will not be reprinted here by can be obtained from the ArMA office.)

Nominations having been made and seconded and a vote of the members having been taken, the following were elected to serve in the capacity set forth. Neil O. Ward, M.D., Chairman; Frank A. Shallenberger, Jr., M.D., Vice Chairman; William G. Payne, M.D., Secretary; Manuel Ma. Guerrero, III, M.D., Delegate to the Arizona Medical Association; F. C. Leppard, Jr., M.D., Delegate to the Arizona Medical Association; Jay S. Fleishman, M.D., Alternate Delegate to the Arizona Medical Association; and Dennis C. Westin, M.D., Alternate Delegate to the Arizona Medical Association.

Several resolutions and/or positions were considered by the members, resulting in the following actions being taken.

It was moved and carried that the following resolution be submitted to ArMA's Legislative Committee as and for the views and position of the Hospital Medical Staff Section regarding current Legislative activities:

Whereas, Health Care Costs continue to rise; and

Whereas, Legislative efforts are increasing to control those costs, including the recent announcement of plans for a rate-setting commission to be known as the Arizona Health Care Review Authority; and

Whereas, the vast majority of citizens in Arizona are cared for by physicians in private practice; and

Whereas, physicians are best qualified to assess appropriate and quality health care; therefore, be it

Resolved, That if any health care commission or panel be designed and mandated by the Arizona Legislature it include a Private Practice physician representative as a full voting member.

It was moved and carried that the Hospital Medical Staff Section communicate to the Arizona Coalition for Cost Effective Quality Health Care and the Arizona Hospital Association offering participation in an ongoing, open fashion in the negotiations to lower health care costs in Arizona.

It was moved and carried that the Hospital Medical Staff Section go on record as recommending that the respective Hospital Medical Staff Section Committees invite their ArMA Hospital Medical Staff Section representatives to attend and participate in executive committee meetings.

It was moved and carried that the Hospital Medical Staff Section go on record as supporting the appointment of medical staff members in private practice to hospital governing boards.

Many items for future agendas were mentioned and briefly discussed, with Dr. Ward requesting all representatives to forward suggested topics and issues that they might want included on future agendas at least one month prior to any scheduled meeting. While the first general business meeting of the section would be scheduled for April 26, 1984, at the time of ArMA's Annual Meeting, it was agreed that the General Council would meet sometime prior to November 1 and then, on an ongoing basis, possibly once every two or three weeks; and, should matters arise on which section action was required, meetings would be called.

Discussed throughout the meeting was the need for the Hospital Medical Staff Section to be seen, by governing boards, administration, and others, as a cooperative rather than an adversary group. Expressed often was the belief that through this working entity liaison could be created among the various hospitals, through which problems could be confronted and workable solutions evolved. It was determined that any interest by members of governing boards or administration in attending meetings of HMSS be encouraged and that, besides the representative's efforts to create closer relations with his or her own hosp members of the Council be responsi for a certain number of hospitals in a attempt to strengthen the working relationship between medical staffs, boards, and administration. An ongoing effort would be made to solicit representatives to this section from Arizona hospitals not already involved.

RETIREMENT PROGRAM COMMITTEE

The Retirement Program Committee met on October 8, 1983.

Mr. Pingree reviewed the history of the employees' pension program and the attempt to redesign it in such a way that benefits would not be jeopardized but premiums would be reduced. He reviewed Cal Western's correspondence which indicated they were not interested in changing their actuarial assumptions in such a way as to benefit ArMA's program. A variety of approaches were discussed at some length by the committee, and the following action was taken. It was moved and carried to recommend to the Board of Directors 1) that the Association disengage from Cal Western Life Insurance Company as the administrator for ArMA's retirement program, 2) that the Association engage the firm of Scott, Tellier & Co. to prepare the necessary actuarial work for the program, and 3) that the Association engage a bank (probably Valley National Bank of Arizona) as investment advisor and administrator for the ArMA pension program.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Arizona Medical Association and/or the Accreditation Council for Continuing Medical Education.

Arizona Chapter, American Cancer Society
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital, Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
The Eye Foundation
Flagstaff Hospital & Medical Center of Northern Arizona
Good Samaritan Medical Center, Phoenix
Health Maintenance Associates, Phoenix
Maricopa Medical Center, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
St. Joseph's Hospital & Medical Center, Phoenix
St. Joseph's Hospital, Tucson
St. Luke's Hospital & Medical Center, Phoenix
St. Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

NOVEMBER

Current Topics in Medicine: Arizona-Sonora Physicians Conference
November 19. Phoenix Country Club. Sponsor: Phoenix Memorial Hospital. Contact: Medical Staff Office, Phoenix Memorial Hospital, 1201 South 7th Ave., Phoenix, Arizona 85036. Approved for 6 hours of Category 1 credit.

Selected Topics on Malignant Melanomas and Inflammatory Diseases of the Skin
November 19-20. The Cottonwoods Resort, Scottsdale. Sponsors: Arizona Medical Association and Arizona Society of Pathologists. Contact: Beverly Richter, Arizona society of Pathologists, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 7 hours of Category 1 credit.

Annual Fall Pediatric Conference—Allergy & Asthma
November 26-27. Scottsdale Doubletree. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 8.25 hours of Category 1 credit.

Ericksonian Approaches to Hypnosis & Psychotherapy
November 30-December 4. Phoenix Civic Plaza. Sponsor: Arizona State Hospital and Milton H. Erickson Foundation. Contact: Jeffery K. Zeig, Ph.D., Milton Erickson Foundation, 3606 North 24th Street, Phoenix, Arizona 85020.

DECEMBER

You're the Expert: Crucial Cardiac Decisions and the Nurse Specialists
December 1-3. U. of A. Health Sciences Center, Tucson. Sponsor: American College of Cardiology, U. of A. College of Medicine. Contact: Registration Secretary, Extramural Progams Department, American College of Cardiology, 9111 Old Georgetown Road, Bethesda, Maryland 20814. Approved for hour per hour Category 1 credit.

Arthritis and Rheumatic Diseases—U. of A. College of Medicine Clinical Seminar Series
December 3. Phoenix Hilton. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85713. Approved for 7 hours of Category 1 credit.

Problems in the Diagnosis and Management of Breast Cancer
December 5-7. Scottsdale Arizona. Sponsor: American Society of Clinical Pathologists. Contact: Regional Education Activities, 2100 West Harrison Street, Chicago, Illinois 60612. Approved for 19 hours of Category 1 credit.

12th Annual Radiology Seminar
December 9-11. Camelback Inn, Scottsdale. Sponsor: Maricopa Medical Center. Contact: Office of Continuing Medical Education, 2601 E. Roosevelt, Phoenix, Arizona 85006. Approved for 22 hours of Category 1 credit.

Gastrointestinal Diagnosis—Workshops in Gastroenterology and GI Radiology
December 9. Camelback Inn, Scottsdale. Sponsor: Maricopa Medical Center, Department of Radiology. Contact: Alex Newman, M.D., Department of Radiology Maricopa Medical Center, P.O. Box 5099, Phoenix, Arizona 85010. Approved for 22 hours of Category 1 credit.

Advanced Cardiac Life Support Recertification and Provider
December 14-15. Phoenix. Sponsor: Arizona Affiliate, American Heart Association, ACEP. Contact: Doug Allen, Arizona Chapter American College of Emergency Physicians, 810 West Bethany Home Rd., Phoenix, Arizona. Provider Course approved for 21 hours of Category 1 credit and Recertification approved for 13 hours.

Current Perspectives III
Current Perspectives in Cerebrovascular Disease
December 14. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Rd., Phoenix, Arizona 85013. Approved for 3½ hours of Category 1.

JANUARY 1984

Crisis and Emergency Pediatrics
January 12-15. El Conquistador Resort, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 17.75 hours of Category 1 credit.

Current Perspectives IV: Allergy
January 18. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Category 1 credit.

Musculoskeletal Diseases in the Aged
January 26-28. Point Tapatio Resort, Phoenix. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 N. 19th Street. Phoenix, Arizona 85006.

Today's Challenges in Allergy and Immunology
January 28. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 7 hours of Category 1 credit.

ECG Interpretation and Arrhythmia Management
January 27-29. Marriott Hotel, Tucson. Sponsor: International Medical Education Corporation. Contact: IMEC, 64 Inverness Drive, East, Englewood, Co. 80112. Telephone: 800-525-8651 or 303-790-8445, ext. 123. Approved for hour per hour Category 1 credit.

FAR WESTERN MEDICAL ASSOCIATION
January 28—February 4, 1984
Sun Valley, Idaho

Theme: "What's New in Medicine and Surgery"

Spring Scientific Meeting
March 3—17, 1984
Cortina, Italy (first week)

Theme: "Medicine in Europe Today"

Approved for hour per hour Category I credit

Please write to:
Far Western Medical Association
P.O. Box 3817
Van Nuys, California 91407
for detailed information

What you don't know about trauma could kill somebody.

Last year, more Americans were killed
by trauma than were killed in the entire Vietnam War.
The shame of it is, about half of those 100,000
lives could have been saved with proper treatment.
But it takes 45 life-saving decisions within just 30 minutes.
Do you know enough to make the right decisions?
If you'd like to sharpen your trauma skills, join us in Phoenix
for our third annual symposium, Trauma Care '84.

Please send me more information on Trauma Care '84, February 19-22.
NAME ____________________ ORGANIZATION ________________
ADDRESS ____
CITY _________________________ STATE ____________ ZIP _____
MAIL TO: Trauma Care National Symposium John C. Lincoln Hospital & Health Center
9211 N. 2nd Street, Phoenix AZ 85020 OR CALL: (602) 943-2381 Ext. 1736

TRAUMACARE
1984

Musculoskeletal Diseases in the Aged

a national, multi-disciplinary conference

January 26-28, 1984
at the Pointe Tapatio Resort, Phoenix

The conference will feature presentations by noted authorities in the fields of orthopedic surgery, preventive and rehabilitative medicine, rheumatology, gerontology and psychiatry. Guest faculty members will include Louis V. Avioli, M.D., St. Louis · John Baum, M.D., Rochester, New York · Stanley J. Brody, J.D., MSW, Philadelphia · Mack L. Clayton, M.D., Denver · A. Seth Greenwalt, D. Phil. (Oxon), Cleveland · Herbert Nickens, M.D., M.A., Rockville, Maryland · Fran Roberts, R.N., M.S., Phoenix · Isadore Rossman, Ph.D., M.D., New York City · Robert G. Volz, M.D., Tucson.

Sponsored by St. Luke's Medical Center, Phoenix
Robert R. Karpman, M.D., Conference Chairman

For additional information, contact:
Christine Campbell
Director of Medical Meetings
St. Luke's Medical Center
1800 E. Van Buren, Phoenix, Arizona 85006
(602) 251-8402

THE AMERICAN SOCIETY FOR PARENTERAL AND ENTERAL NUTRITION

Presents its

8th CLINICAL CONGRESS
January 20—February 1, 1984
Las Vegas, Nevada

The 8th Clinical Congress will offer both basic and advanced information on the delivery of specialized nutrition support, as well as research papers on the latest developments in clinical nutrition. A.S.P.E.N. is approved as a provider of programs offering continuing education credits to physicians, nurses, pharmacists and dietitians.

The Congress will include: Symposia: Nutrition and Sepsis * Nutrition Support in Pediatrics * Use of Special Amino Acid Formulae * Prostglandins in Clinical Nutrition * Intravenous Catheter Management * Nutritional Repletion * Trace Minerals * Cost Reimbursement

Clinical Workshops: Hyperglycemia * Nutrition Product Selection * Cyclic Parenteral Nutrition * Enteral Feeding Complications * Home Parenteral Nutrition and the Pediatric Patient * Radiation Therapy and the GI Tract * Care of the Patient Requiring Prolonged Venous Access * Computers and Nutritional Support Services * Preoperative Nutritional Support * Nutrition Therapy in Cancer Patients * Outpatient Parenteral and Enteral Nutrition.

Postgraduate Courses: Introduction to Clinical Nutrition * Care of the Patient with an Eating Disorder * Clinical Gastroenterology * Metabolic Monitoring of the Nutritionally Supported Patient * Pediatric Gastroenterology * Home TPN * Parenteral Nutrition in Neonates * Energy Metabolism * Critical Care Support * Advances in Enteral Feeding * Nutritional Support in Alcoholic Patients.

Plus: Scientific Short Paper Sessions * Specialty Sessions for Nurses, Pharmacists, and Dietitians * Roundtable Discussions * Poster Sessions * Exhibits * Cinema

☐ **Please send me more information of A.S.P.E.N.'s Clinical Congress.**

☐ **Please send me information on membership in A.S.P.E.N.**

Name ______________________

Address ______________________

City ______________________ **State** ______________________ **Zip** ____________

Complete and return to: A.S.P.E.N., 1025 Vermont Avenue, N.W., Washington, D.C. 20005

FEBRUARY

Third Annual Critically Ill Child Symposium
February 2—4. St. Joseph's Hospital and Medical Center, Cullen Memorial Building, Phoenix. Sponsor: St. Joseph's Hospital and Medical Center, Department of Pediatrics. Contact: Kathy Volpe, Pediatric Education, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona 85013. Approved for 15 hours of Category 1 credit.

Current Perspectives V: Cancer
February 4. ArMA Building, Phoenix. Sponsor: Arizona Medical Association, Inc. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Category 1 credit.

Clinical Problems in Adolescent Medicine
February 11. Phoenix Hilton. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Aproved for seven hours of Category 1 credit.

Eleventh Annual Barrow Neurological Symposium—Stroke
February 13-15. La Posada Resort Hotel, Scottsdale. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., 222 West Thomas Road, Suite 415, Phoenix, Arizona 85013. Approved for hour per hour Category 1 credit.

Frontiers in Ophthalmology
February 16-18. Mountain Shadows Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Chriss Campbell, Meeting Planner, St. Luke's Medical Center, 525 N. 18th Street Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

Advances in Obstetrics and Gynecology
February 22-24. Scottsdale Hilton. Sponsor: Maricopa Medical Center: Contact: John V. Kelly, M.D., Department of OB/GYN, Maricopa Medical Center, 2601 E. Roosevelt, Phoenix, Arizona 85008. Approved for hour per hour Category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

F
RON
TIERS IN
OPHTHALMOLOGY

The 10th Annual FRONTIERS IN OPHTHALMOLOGY seminar will feature presentations on the most recent advancements in ophthalmic care.

CATARACT/IOL: Henry M. Clayman, M.D., University of Miami (Florida) School of Medicine • **CORNEA/YAG LASER:** Richard H. Keates, M.D., The Ohio State University • **GLAUCOMA/TRABECULOPLASTY:** Irvin P. Pollack, The Johns Hopkins University • **OCULOPLASTICS:** Charles R. Leone, Jr., M.D., University of Texas Health Science Center • **NEURO-OPHTHALMOLOGY:** Henry J.L. Van Dyk, M.D., Louisiana State University • **RETINA/VITREOUS:** Yale Fisher, M.D., Cornell University.

February 16-18, 1984
at the famed Mountain Shadows Resort,
Scottsdale, Arizona

Approved for 15 hours, Category I C.M.E. credit

Sponsored by the Prentice Eye Institute and St. Luke's Medical Center, Phoenix

For additional information, contact:
Christine Campbell, Director of Medical Meetings
St. Luke's Medical Center
1800 E. Van Buren, Phoenix, Arizona 85006
(602) 251-8402

1984 CME CRUISE/CONFERENCES ON LEGAL—MEDICAL ISSUES

Caribbean, Mexican, Hawaiian, Alaskan, Mediterranean. 7—14 days in Winter, Spring, Summer. Approved for 18-24 CME Category 1 credits (AMA/PRA). Distinguished professors. FLY ROUNDTRIP FREE ON CARIBBEAN, MEXICAN, & ALASKAN CRUISES. Excellent group fares on finest ships. Registration limited. Prescheduled in compliance with present IRS requirements. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

34th ANNUAL COURSE FOR PHYSICIANS IN FAMILY PRACTICE

For the 34th consecutive year, Mount Zion Hospital and Medical Center presents this postgraduate course designed for physicians in family and general practice.

To be held at Mount Zion Hospital and Medical Center, San Francisco, on Wednesday through Friday, March 7-9, 1984.

Co-Chairmen: Rene Bine, Jr., M.D.
James A. Davis, M.D.
Tuition: $225/before February 1
$250/after February 1
Credit: 19 hours in Category I

For more information, contact:

Martin Schimerlik
Office of Continuing Education
Mount Zion Hospital & Medical Center
P.O. Box 7921
San Francisco, CA 94120
414/567-6600, ext. 2404

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.

Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.

Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.

Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building

Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.

Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept. & Nov.

Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.

CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 8500

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

601 E. Roosevelt, Phoenix, AZ 85008.
Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.
Surgery Burn Grand Rounds
Weekly 7:30 a.m.
Medicine Chest
st & 3rd Monday, 12 Noon.
Medicine GI
nd & 4th Monday, 12 Noon.
Medicine Dermatology
th Monday, 12 Noon.
Chest/Surgery
Weekly, Mondays, 1:30 p.m.
Ambulatory Pediatrics
Weekly, 2:45 p.m.
OB Problem Conference
Weekly, Tuesday, 7:30 a.m.
Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.
Medicine Neurology
st & 3rd Tuesday, 12 Noon.
Medicine Renal
nd Tuesday, 12 Noon.
Emergency Medicine
th Tuesday, 12 Noon.
OB/GYN—Tri-Hospital Perinatal Mortality
rd Tuesday, 12 Noon.
OB/GYN—Departmental Grand Rounds
st and 2nd Tuesday, 12 Noon.
GYN Endocrine Conference
th Tuesday, 12 Noon.
Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..
Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.
Pediatric Grand Rounds
nd Tuesday, 7:30 a.m.
Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.
Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.
OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.
Surgery
Weekly, Wednesday, 7:00 a.m.
Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.
Psychiatry Staff
st Wednesday, 11:00 a.m.
Psychiatry General Conference
nd, 3rd, & 4th Wednesdays, 12 Noon.
Medicine Cardiology
st Wednesday, 12 Noon.
Medicine Hematology
nd Wednesday, 12 Noon. Contact: Neil Chernoff, M.D.
Medicine Mortality
rd Wednesday, 12 Noon.
Medicine Infectious Disease or Hematology
th Wednesday, 12 Noon.
Pediatrics Renal/Endo Conference
st Wednesday, 12:30 p.m.
Pediatrics Infectious Disease
th Wednesday, 12:30 p.m.
Anesthesiology Staff Lecture
st, 2nd & 4th Wednesday, 2:30 p.m.
Surgery Morbidity & Mortality Conference
st, 2nd & 4th Wednesday, 3:30 p.m..
Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.
Surgery Urology Staff
3rd Thursday, 7 :30 a.m.
Anesthesiology Journal Club
4th Thursday, 8:00 a.m.
Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.
Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.
Burn Mortality Conference
4th Thursday, 8:00 a.m.
Medicine Problem Case Conference
1st Thursday, 12 Noon.
Medicine Rheumatology
2nd Thursday, 12 Noon.
Medicine Staff & House (Separate)
4th Thursday, 12 Noon.
OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.
Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.
Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.
Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
1st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
1st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
1st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
1st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12 :30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.

Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

6025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.

Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 7:30-8:30 a.m.
Otolaryngology Grand Rounds
4th Wednesday, 4:00-5:00 p.m., Conference Rm. A, Contact: N. Wendell Todd, M.D.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251.
Contact: W. S. Williams, M.D., Approved for Category 1 credit.

Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.

Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711 Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium.
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium Contact: Leonard Joffe, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ. Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A.
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.
Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.
Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.
Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.
Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.
Perinatal Conference
2nd Tuesday, 7:00 a.m.
Surgical Conference
2nd Tuesday, 7:15 a.m.
Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.
Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.
Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.
Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.
Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.
Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.
Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.
GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.
Interhospital Nuclear Medicine Conferenc
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.
Medical/Surgical GI Conference
1st & 3rd Monday, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.
Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact Dr. Russo.
Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.
GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.
GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5 Contact: Dr. Sanowski.
GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T- Contact: Dr. Sanowski.
Urology Histopathology Conference
Weekly Tuesdays, 8:00-9:00 a.m., Rm 241 Contact: Drs. Haddad & Kivirand, Ext. 417
Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.
Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.
Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.
Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.
Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact Dr. Zeller.
Urology Conference
Weekly Friday. 12:00-1:00 p.m., Room 313 Contact: Dr. Haddad, Ext 418.
Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITA MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.
Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

ɔurgical Rounds
th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

601 South Sixtieth Ave., Tucson, AZ 5723. Contacts listed below. Approved for ;ategory 1 credit.

ledical/Surgical Chest Conference
/eekly, Tuesday, 2:00 p.m., Contact:)r. Young.

ledical Grand Rounds
/eekly, Wed., 12:00-1:00 p.m., VA Hospital taff Conf. Rm. & (AHSC), Contact: ay Smith, M.D.

urgical Grand Rounds
/eekly, Wed., 4:00 p.m., Contact: r. Putnam.

ndocrinology Seminar
st, 3rd, & 5th Thursday, 12:00-1:00 p.m., m. N318, Contact: Dept. of Internal ledicine.

irand Rounds
/eekly, Thursday, 11:00 a.m., Bldg. 107, ontact: J. Fitzharris, D.O.

ascular Radiology, Interesting Case Conf.
/eekly, Thursday, 12:00 noon.

eurology Grand Rounds
/eekly, Friday, 12:00 p.m., Contact: r. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

400 Avenue A., Yuma Az 85364. Contact: lan Winfield, M.D. Approved for Category credit.

adiology Conference
st Tuesday, 7:00 a.m.

peration Outreach
nd Tuesday, 6:30 p.m.

athology Conference
h Tuesday, 7:00 a.m.

peration Outreach
nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

ɔonsor: U of A College of Medicine, ucson, AZ 85724. Robert M. Anderson, .D., Dir. of CME. Contact: See below. pproved for Category 1 credit.

nesthesiology Board Review Conference
nd & 4th Monday, 4:00-5:00 p.m., AHSC ining Rm. C&D, Contacts: Dr. Vaughn & ryc.

nesthesiology Basic/Clinical Sciences ectures
eekly, Thursday, 4:00-5:00 p.m., Room 403.

nesthesiology Case Discussion
eekly, Wednesday, 7:00 a.m., AHSC, ining Rm. C&D.

nesthesiology Resident Presentation
t Monday, 4:00-5:00 p.m., AHSC Dining oom, C&D, Contacts: Drs. Otto & ehngut.

ancer Center Tumor Board Seminar
d Tuesday, Monthly, 12:00-1:00 p.m., SC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

Dermatology Conference
4th Monday, 5:15 p.m., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly, Wednesday, 11:30 a.m., Contact: Dr. Lynch.

Ear, Nose & Throat Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. S. Coulthard

Endocrinology Seminar
Weekly, Thursday, 12:00-1:00 p.m., Contact:
Dr. Johnson.

Emergency Medicine Grand Rounds
Tuesdays, 9:00 a.m., AHSC, Contact: Dr. Sanders.

GI Pathology Conference
4th Friday, 1:30 p.m., AHSC, Contact: S. Paplanus.

GI Radiology Conference
2nd & 4th Mondays, 7:30 a.m., AHSC, Contact: Dr. T. Hunter.

Head & Neck Tumor Management Conference
Weekly, Wednesday, 4:00 p.m., Contact: Dr. Murrell.

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1:00 p.m., Rm. 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly, Wednesday, 12:00-1:00 p.m., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 a.m., AHSC, Contacts: Drs. Hughes & Alcorn.

Neuromuscular Disease Conference
Weekly, Friday, 11:30 a.m., Contact: Dr. Stern.

Neuropathology Case Review
Weekly, Friday, 8:30 a.m., UAHSC, Dr. P. Johnson.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: Dr. P. C. Christenson.

Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 p.m., Contact: Dr. Stern.

Neurosciences Seminar
Weekly, Tuesday & Friday, 7:30 a.m., AHSC, Contact: Dr. C. Bamford.

Nuclear Medicine
Weekly, Thursday, 7:30 a.m., AHSC Radiology Conference Rm.

OB/GYN Lectures
Weekly, Friday, 1:00 p.m., AHSC, Contact: Dr. C. D. Christian.

Ophthalmology Grand Rounds
3rd Friday, 7:30 a.m., AHSC, Contact: Dr. J. Herschler.

Ophthalmology Retina Fluoro. Conference
Weekly, Thursday, 5 p.m., AHSC, Contact: Dr. H. Cross.

Orthopedic Rounds
Saturday, 8:00 a.m., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Conference
Weekly, Monday, 12 noon, AHSC, Contact: Dr. C. D. Christian.

Pathology Seminar
Weekly, Friday, 4:30-5:30 p.m., AHSC, Rm. 5120. Contact: Dr. P. Finley.

Tucson Pathologist Conference
1st Monday, 7:30 p.m., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Lillian Valdes-Cruz.

Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Otakar Koldovsky.

Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact: Dr. Marilyn Heines & Jane Ruggill.

Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC, Rm. 8403, 5th Floor Auditorium.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan Levenson, Palo Verde Hospital.

Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact: Dr. Benjamin Burrows.

Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm. 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC, Contact: Dr. Christenson.

Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC, Rm. 0655.

Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC, Contact: Dr. Freundlich.

Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC, Library Rm.1535C.

Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m., Contact: Dr. Nagle.

Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag. Radiology Conf. Rm.

Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC, Contact: Dr. Wangensteen.

Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact: Dr. Wangensteen.

Trauma Conference
Thursday. 4:00-5:00 p.m.. AHSC, Rm. 5505.

Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact: Dr. Keith Likes.

Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon, AHSC & VA Hospital Contact: Dr. G.W. Drach

Vascular Surgery Conference
Weekly Tuesday, 4:00-6:00 p.m., AHSC, Contact: Dr. J. Goldstone.

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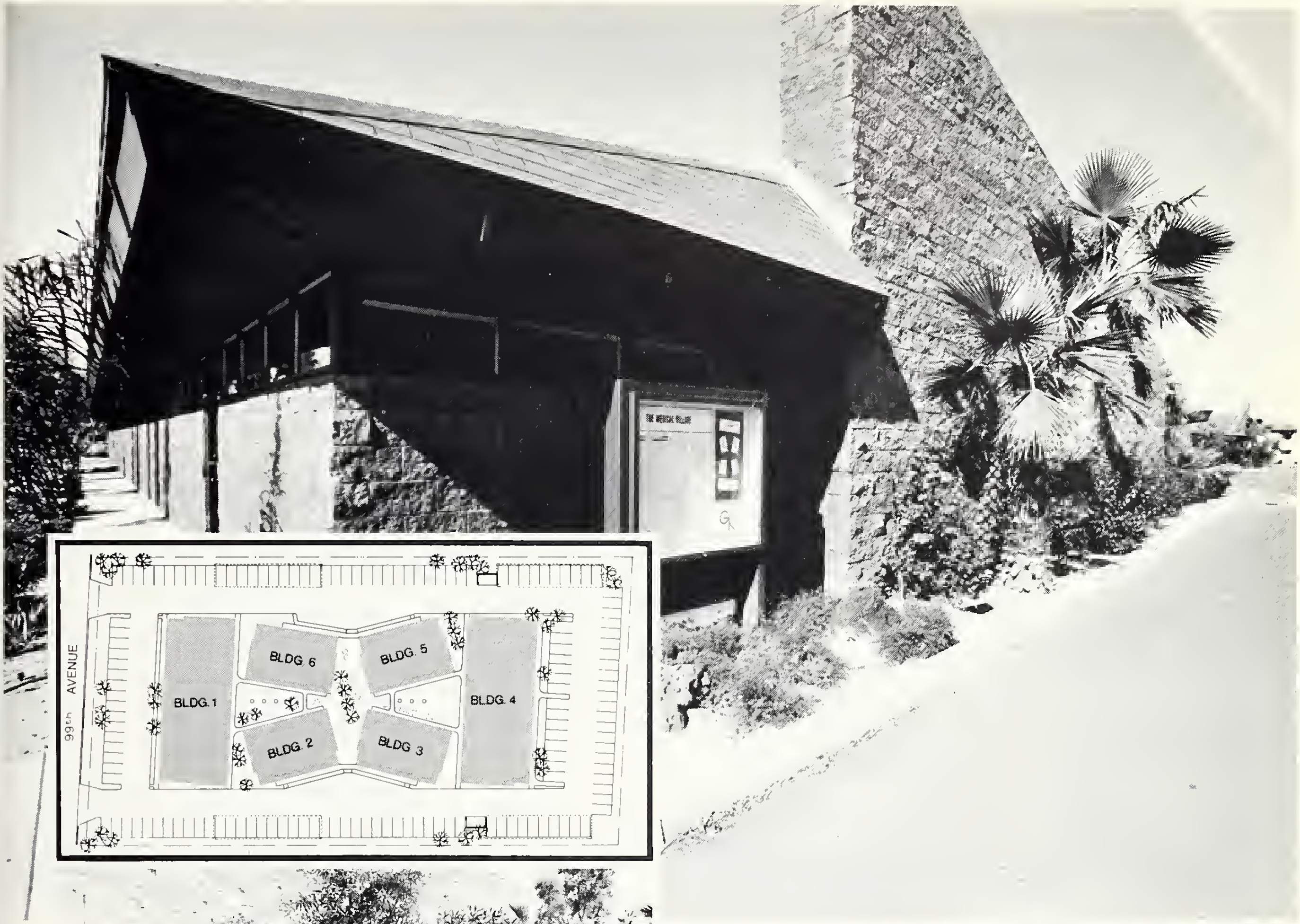

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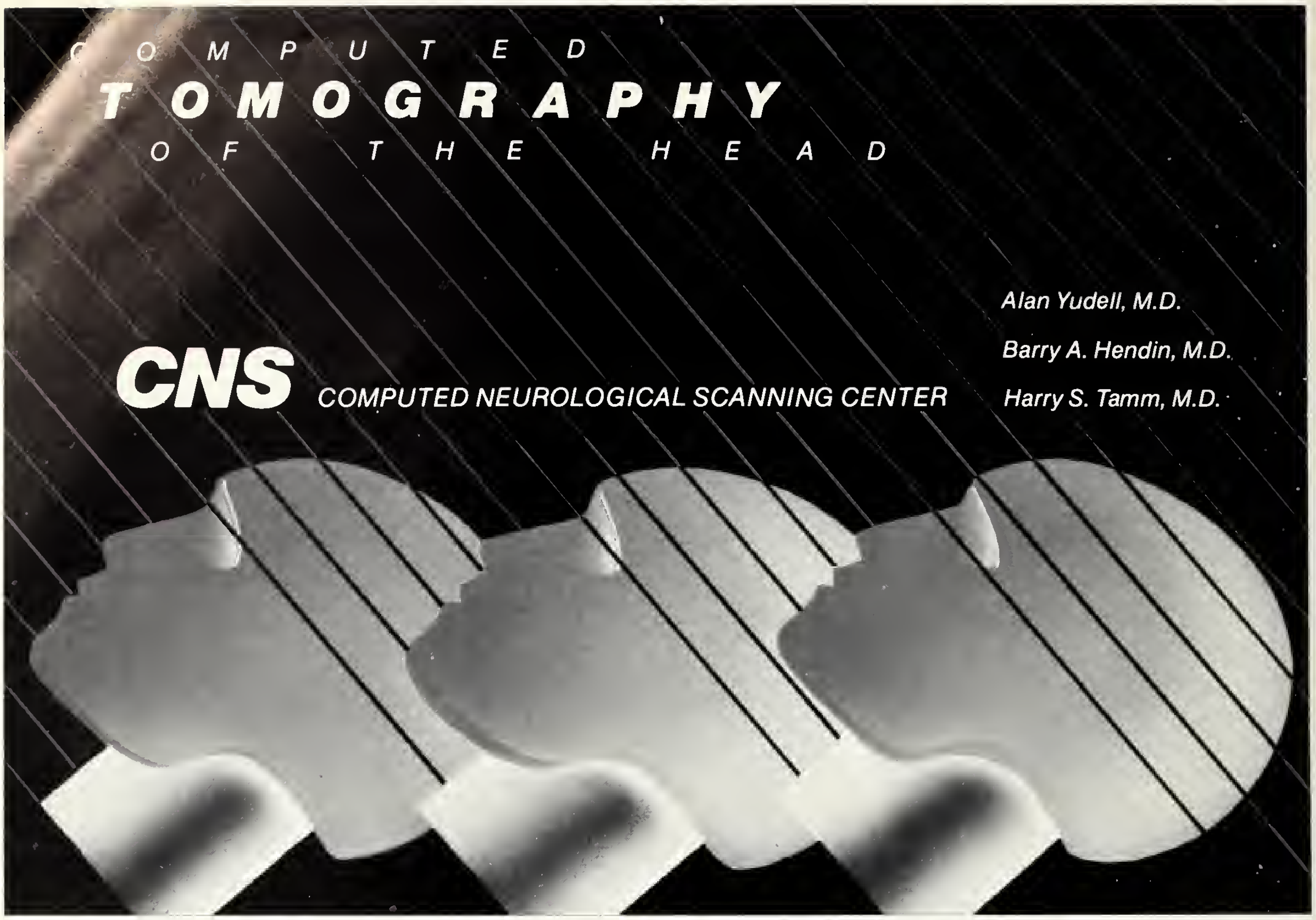

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ARIZONA MEDICINE

(ISSN 0004-1556)

JOURNAL OF ARIZONA MEDICAL ASSOCIATION

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

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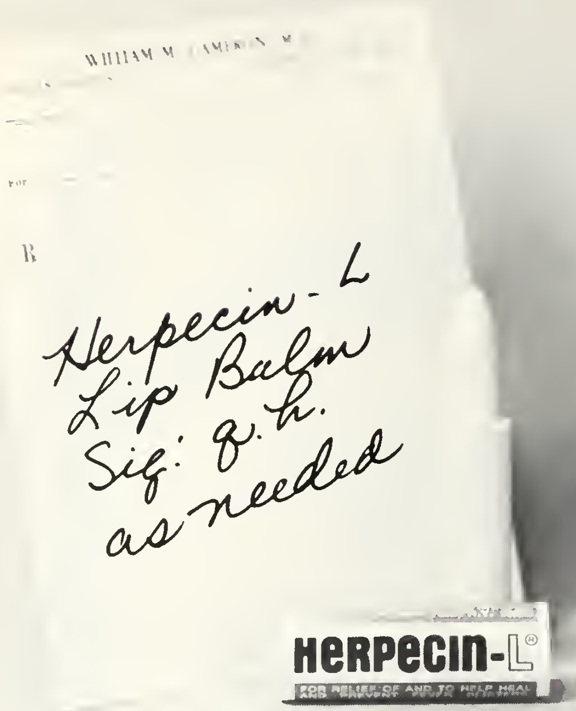
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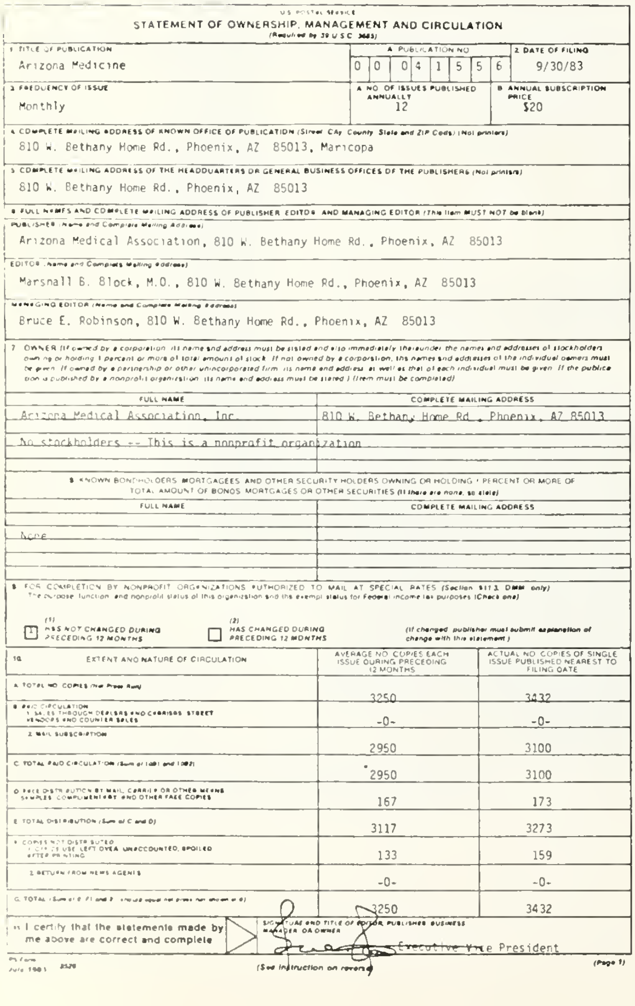

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(Required by 39 U.S.C. 3685)

1. TITLE OF PUBLICATION: Arizona Medicine
A. PUBLICATION NO.: 0 0 0 4 1 5 5 6
2. DATE OF FILING: 9/30/83
3. FREQUENCY OF ISSUE: Monthly
A. NO. OF ISSUES PUBLISHED ANNUALLY: 12
B. ANNUAL SUBSCRIPTION PRICE: $20
4. COMPLETE MAILING ADDRESS OF KNOWN OFFICE OF PUBLICATION *(Street, City, County, State and ZIP Code) (Not printers)*: 810 W. Bethany Home Rd., Phoenix, AZ 85013, Maricopa
5. COMPLETE MAILING ADDRESS OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS *(Not printers)*: 810 W. Bethany Home Rd., Phoenix, AZ 85013
6. FULL NAMES AND COMPLETE MAILING ADDRESS OF PUBLISHER, EDITOR, AND MANAGING EDITOR *(This item MUST NOT be blank)*
PUBLISHER *(Name and Complete Mailing Address)*: Arizona Medical Association, 810 W. Bethany Home Rd., Phoenix, AZ 85013
EDITOR *(Name and Complete Mailing Address)*: Marsnall B. Block, M.D., 810 W. Bethany Home Rd., Phoenix, AZ 85013
MANAGING EDITOR *(Name and Complete Mailing Address)*: Bruce E. Robinson, 810 W. Bethany Home Rd., Phoenix, AZ 85013

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Arizona Medicine (ISSN 0004-1556) is the official monthly publication of the Arizona Medical Association (810 W. Bethany Home Rd., Phoenix, AZ 85013) and the Medical Society of the United States and Mexico. Subscription price $20.00 per year. $2.00 single copy. Second-class postage paid at Phoenix, Arizona and at additional mailing offices. POSTMASTER: Send address changes to *Arizona Medicine* 810 W. Bethany Home Rd., Phoenix, AZ 85013.

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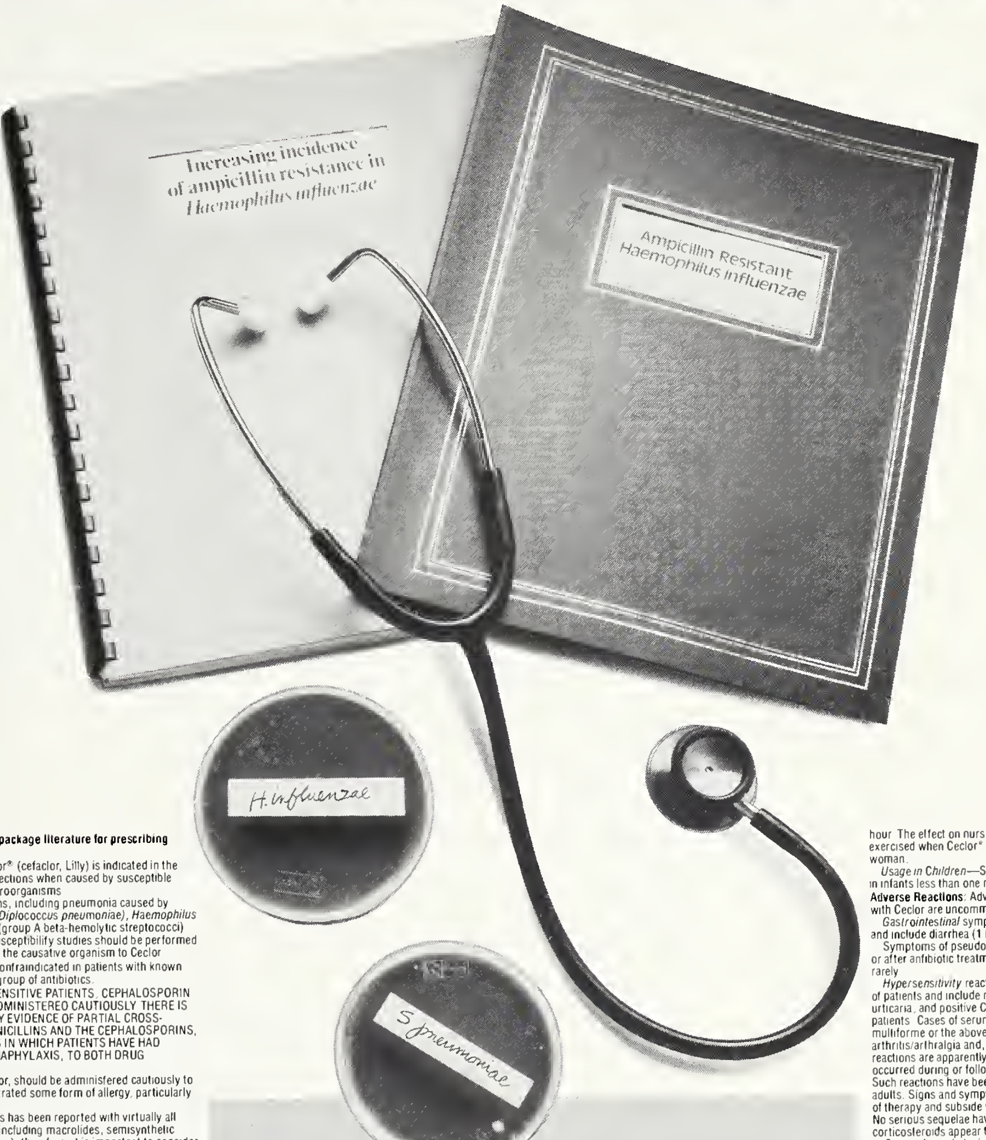
An added complication... in the treatment of bacterial bronchitis*


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

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cefaclor

Pulvules®, 250 and 500 mg

Brief Summary. Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by C. *difficile*. Other causes of colitis should be ruled out

Precautions: *General Precautions*—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g , pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor There are, however, no adequate and well-controlled studies in pregnant women Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour The effect on nursing infants is not known Caution should be exercised when Ceclor® (cefaclor, Lilly) is administered to a nursing woman.

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients)

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

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*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H influenzae* [8]

Note Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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CONTRAINDICATIONS: Hypersensitivity to any of the components, concurrent MAO inhibitor therapy, severe hypertension, bronchial asthma, coronary artery disease, stenosing peptic ulcer, pyloroduodenal or bladder neck obstruction. Do not use in children under 12 years.
Do not use this drug in patients with narrow-angle glaucoma, obstructive or paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrage, severe ulcerative colitis, toxic megacolon complicating ulcerative colitis, myasthenia gravis. Do not use in nursing mothers.
Use in treating lower respiratory tract symptoms, including asthma, is contraindicated.
WARNINGS: Caution patients about activities requiring alertness (e.g., operating vehicles or machinery). Antihistamines are more likely to cause dizziness, sedation, and hypotension in elderly patients. Patients should also be warned about the possible additive effects of alcohol and other CNS depressants.
Usage In pregnancy: Safe use in pregnancy has not been established. Use only when the potential benefits have been weighed against the possible hazards to the mother and child. Note that an inhibitory effect on lactation may occur.
PRECAUTIONS: Use with caution in patients with a history of bronchial asthma, increased intraocular pressure, hyperthyroidism, cardiovascular disease, hypertension, hiatal hernia with reflux esophagitis, intestinal atony of the elderly or debilitated intestinal obstruction, myasthenia gravis, renal function impairment, and ulcerative colitis (severe).
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Desert Valley Medical Plaza offers physician's offices immediately adjacent to new Humana Hospital

PROTOTYPE MEDICAL OFFICE COMPLEX OPENS IN NORTH VALLEY

Appreciating a fine team's synchronization should come naturally to a physician. Timing, interdependence and professionalism are all qualities that can swing an endeavor towards fruition or failure, for, as medical personnel are well aware, in life-threatening situations, the ability of a group to function immediately, accurately and smoothly is essential.

Those involved in the healing arts should, therefore, find a comfortable mesh of attitudes and approaches in the design plan for the Desert Valley Medical Plaza.

Desert Valley Medical Plaza was created exclusively to meet the anticipated needs of doctors, their support staffs, and patients. The plaza facility, located directly across the street from the new Humana Hospital Desert Valley, concentrates around a primary care and general practitioner physician core, medical specialists, ancillary support facilities and the environmental amenities most desired in a setting orchestrated for human comfort.

> *We also responded to specific technical and business preferences of medical tenants and provided on-site support facilities such as a pharmacy, laboratory and radiology services.*
>
> —John R. Hamilton

The scope of the project and sophistication with which it has matured should come as no surprise to those familiar with another local landmark — The Borgata of Scottsdale — that came into being under the same hands. John R. Hamilton of The Borgata's development firm, Brian Cranfield of Design International, W. Wilson Jones, A.I.A. and Jerry K. Mah, A.I.A. of the Scottsdale-based firm Jones & Mah Architects Incorporated, Michael Evan James, A.I.A. of the space planning division of Peter A. Lendrum Associates, Inc. and David Mattson of J. B. Contractors Inc. again merged their talents to produce the Desert Valley Medical Plaza. Though the two projects may at first appear to have little similarity — since The Borgata is a high-fashion shopping and restaurant complex modeled after a bell-tower-highlighted town in Italy — they in fact share several salient design features.

> *Design elements . . . opulent but not flashy.*
>
> —Jerry K. Mah, A.I.A.

Both the Desert Valley Medical Plaza and The Borgata of Scottsdale came about after extensive research was conducted into the needs and preferences of user tenants and their clientele. Both are large complexes that define space in ways that are scaled to promote ease of human interaction. The sagacity with which creators of both spaces

> *Desert Valley Medical Plaza was created exclusively to meet the anticipated needs of doctors, their support staffs and patients. The facility is located directly across the street from the new Humana Hospital.*

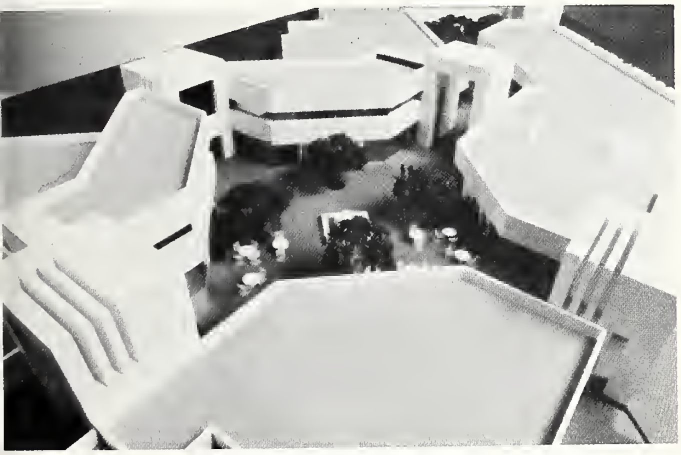
John R. Hamilton

contemplated the projects is evident in the fact that the earliest planning stages indicated exact types of users for specific spaces. Thus, retailers at The Borgata can expect a balance of high fashion shops and physicians locating at Desert Valley Medical Plaza will not face the problem of a concentrated community of competing specialists.

> *Quality construction materials are an up-front expense that is repaid many times over.*
> —David Mattson, J. B. Contractors

In addition, according to Brian Cranfield, "Desert Valley Medical Plaza, like The Borgata, by the very nature of the design elements — such things as colors, textures, special relationships and ambient light and sound levels — will impart the mood most desired by the tenants for their clients. At The Borgata, that mood is one of being in a special place filled with rarities and pleasures. In a medical plaza, the desired mood is one of being put at ease.

> *It's the most outstanding example of a medical office plaza*
> —John R. Hamilton



"The people who come in to see physicians usually are experiencing a high level of stress," continues Cranfield. "They are worried about physical problems and their ramifications and they're afraid of the financial impact of their disorders. We've created an environment that will not only be calming to people who are anxious but will promote preventative medical maintenance by offering a pleasant place to come to."

> *The environment encourages people to come to their doctors for maintenance and not just for emergency care.*
> —Brian Cranfield

"We also responded to specific technical and business preferences of medical tenants," adds John Hamilton. Among these, he explains, are consideration in placement of offices for patients with ambulatory disorders, single level of patient-access offices, private covered parking and separate entrances for physicians, considerate signage, and on-site support facilities such as a pharmacy, laboratory and radiology services. "We have also provided exercise facilities, doctor's lounge and employee lunchroom on the second level," continues Hamilton.

> *Referral base from the hospital . . . general practitioners and primary care physicians.*

Another Borgata-like attribute adapted for the Desert Valley Medical Plaza is the introversion of the interior spaces. Ample parking is provided around the complex, but access to doctor's offices is offered only through the three interior courtyards and connecting pedestrian walkways. The design elements in those open air protected places are subdued and welcoming, opulent but not flashy. Reflective glass effectively doubles the amount of lush greenery, while the whisper-grey-toned surfaces offer a soothingly neutral background palette.

> *We are pleased to have this professional medical complex located directly across the street from Humana Hospital Desert Valley. When you consider that the original plan was to locate two corner shopping centers on this property, the reality of what has been created here is even more extraordinary.*
> —Joe D. Pinion
> Executive Director
> Humana Hospital, Desert Valley

Experience has confirmed the design team's initial premise that investing in quality construction materials is an up-front expense that is repaid many times over. Desert Valley Medical Plaza, therefore, was built to be energy efficient with solar glazing, overhead insulation at the top of the construction industry's standards, heavy landscaping and low maintenance materials. On-site property management and a tenant association are planned to further facilitate response to needs.

"When researching existing facilities," says Cranfield, "we invited physicians, technicians, patients and designers who specialize in this area to point to the most outstanding examples of medical plazas. Ninety percent of them had no place they could point out as exemplary and none of them mentioned as ideal any complex in this county.

"Out intention is for Desert Valley Medical Plaza to become that prototype," continues Cranfield.

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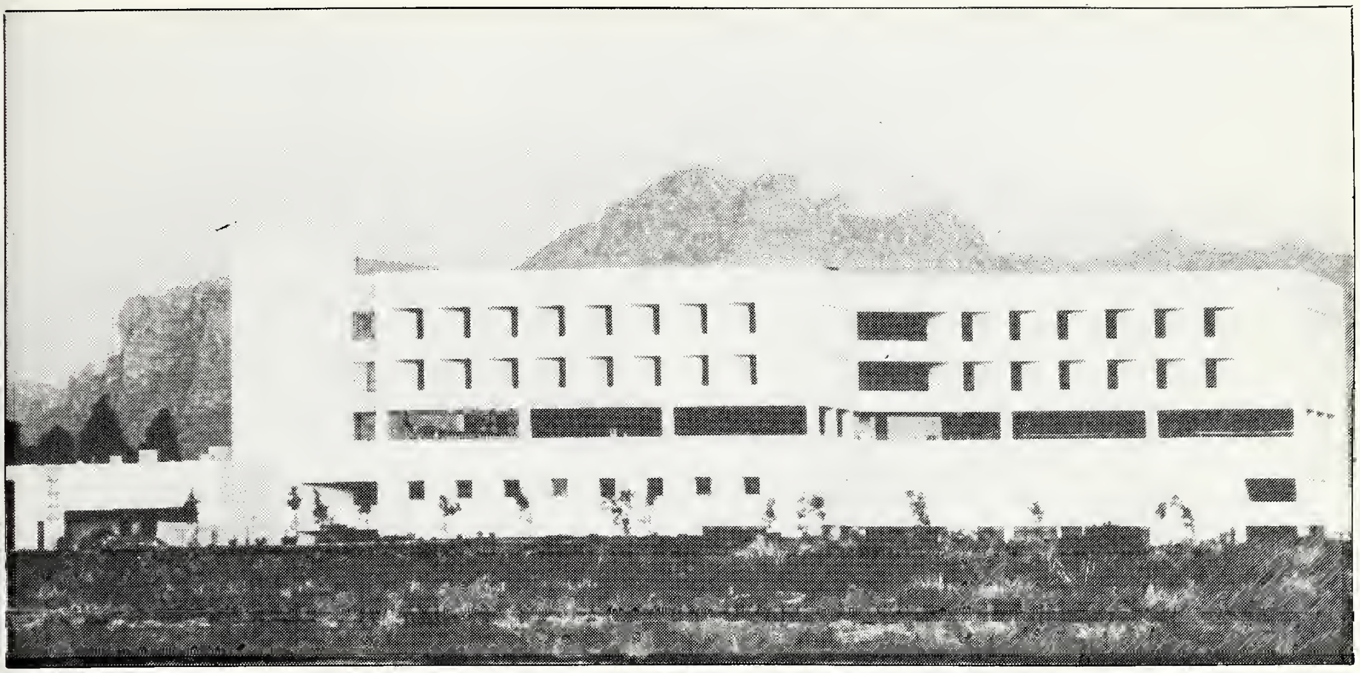

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Infectious Disease

Incidence and Costs of Hepatitis B in Health Care Personnel in Arizona

Suzanne E. Dandoy, M.D., M.P.H.
Bradford L. Kirkman-Liff, Dr. P.H.

Editor:
Philip Ruben, M.D.

Abstract

State health department reports and employee ecords in 26 Arizona hospitals were reviewed to locate cases of hepatitis B in health care workers. In the three years, 1980-1982, forty-four cases of laboratory-confirmed hepatitis B in health care workers were eported to the health department, for a rate of 32.7 per 100,000 workers. The 1982 incidence of hepatitis B in the emainder of Arizona's population was 8.8 per 100,000. Only four of the 44 cases were reported from locations outside the two major metropolitan areas. Sixty-one percent of the cases occurred in hospital employees, chiefly nurses. Few cases were reported from physicians or dentists. For four cases of hepatitis B, details on the exposures and costs to the employing hospital were analyzed. The mean cost was $7844 per case, including medical care, the value of working time lost, and workers' compensation payments.

Key Words: Hepatitis, type B; health care personnel; occupational health

Introduction

The risk of hepatitis B for health care personnel has been documented from several major medical centers,[1-4] as well as in one Arizona Hospital.[5] That risk differs by occupational group and by the degree of exposure to blood and blood products. The availability of hepatitis B vaccine offers an alternative measure for preventing this work-related health problem, previously managed solely through postexposure prophylaxis, screening, and environmental safeguards.[6] In order to make appropriate decisions on utilization of the vaccine, physicians, infection control committees, and employee health services need to assess the risks of hepatitis B infection to health care employees and the costs of the disease to employers. The following report provides information on Arizona's experience with hepatitis B in health care workers, including the cost impact on the hospital as an employer.

Methods

In a random sample of 26 of Arizona's 60 licensed, nonfederal, general hospitals we conducted a retrospective search for employee cases of hepatitis B with onset dates in 1980 or 1981. The 26 hospitals ranged in size from 23 to 626 beds and were located in the two major metropolitan areas and 14 rural cities and towns in Arizona. The number of employees in these hospitals ranged from 52 to 2,708. With regard to specialized services, eight of the institutions had inpatient acute renal dialysis beds, twenty had intensive care units, two offered open heart surgery, two had oncology units, and nineteen had 24-hour emergency rooms. Sources of information were employee health and medical records, incident/accident reports, personnel records, and logs of occupational injuries and illnesses. In addition, as a prospective validation procedure, we paid weekly visits in 1982 to six hospitals in Maricopa County, in order to document and follow any work-related cases of hepatitis B.

For each test and treatment provided to the employee with hepatitis B, data on billed charges were used to represent the costs. Costs associated with visits to the emergency room, employee health office, or physician's office were assigned average charges if the actual charges were not available. For workers' compensation and hospital care the actual amount of payment was obtained. Any working time lost, even to receive prophylactic treatment following exposure, was assigned a cost, using the average wage rate for each employee's job class multiplied by the stated or estimated time lost from work for diagnosis and treatment procedures.

The Bureau of Disease Prevention and Epidemiology of the Arizona Department of Health Services supplied us with information, without specific names, on all reported cases of hepatitis B in health care workers with onset dates in 1980, 1981, or 1982. An estimate of the size of the state's health services workforce was obtained from the Arizona Department of Economic Security's Labor Market Information Office.

Results

During the three year period, 1980 through 1982, a total of 644 laboratory-confirmed cases of hepatitis B were reported to the Arizona Department of Health Services. The annual rate was 6.8 cases per 100,000 population in 1980 and 1981, with an increase to 9.3 per 100,000 in 1982. The incidence of hepatitis B in the United States in 1982 was also 9.3 per 100,000.

Forty-four of the 644 Arizona cases (6.8%) were in persons with stated health-related occupations (Table

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From The Center for Health Services Administration, Arizona State University. Reprint requests to Suzanne E. Dandoy, M.D., Center for Health Services Administration, Arizona State University, Tempe, Arizona 85287. This study was supported by a grant from Merck Sharp & Dohme.

Table 1
Reported Hepatitis B Cases in Health Care Personnel, as a Proportion of All Cases, Arizona 1980, 1981, 1982

Year	All Reported Cases	Cases in Health Care Personnel	Percent
1980	184	11	6.0
1981	191	13	6.8
1982	269	20	7.4
Total	644	44	6.8

Source: Bureau of Disease Prevention and Epidemiology, Arizona Department of Health Services

1). Since not all reports to the health department included the patient's occupation, this number underestimated the proportion of health related cases. According to the Labor Market Information Office, approximately 61,100 persons were employed in health services in Arizona in December 1982. Thus, the 1982 rate of hepatitis B in health services personnel was 32.7 per 100,000 while the rate in the remainder of Arizona's population was 8.8 per 100,000, an almost four-fold difference.

The 44 reported cases of hepatitis B in health care personnel were divided equally between males and females; 34 cases (79%) occurred in persons under 40 years of age. Nursing personnel were the most frequently represented occupational group (Table 2). The low number of case reports from physicians and dentists may reflect their unwillingness to report a disease which could damage their careers. Additionally, health care personnel working independently have no reason to file reports since they do not collect any benefits from an employer.

Only four of the 44 cases were reported from locations outside the Phoenix and Tucson metropolitan areas; two of these four were from Indian Health Service facilitie
Over half (61%) of the reported hepatitis B cases wer
employed in hospitals. In the 28 nonfederal, gener
hospitals in the Phoenix and Tucson areas there wer
approximately 25,000 employees in 1981.[7] In 198
through 1982, 24 cases of hepatitis B were reported b
employees of these hospitals, giving an attack of 32.
cases per 100,000 hospital employees per year.

Five of the reported cases of hepatitis B occurred i
employees of the 26 hospitals included in our re
rospective survey. We found information on on
additional employee case of hepatitis B which had n
been reported to the health department. We, therefor
discovered six cases of clinically apparent hepatitis
with onset dates in 1980 and 1981 in these 26 hospital
For three of these cases no treatment was sought fro
nor workers' compensation claims made against th
hospitals. Also, there was no record of an exposur
incident being reported in the preceding year for any
these three cases. While it is possible that these thre
cases could have resulted from work-relate
experiences, we could not verify the association
obtain any cost information. During the 1982 pr
spective study in six Maricopa County hospitals w
discovered one additional employee case of hepatitis

Descriptive information on the four clinically a
parent, work-related cases is presented in Table 3. Th
dialysis nurse (Case 4) had not reported any specif
exposure incident prior to onset of her illness but, i
retrospect, she could recall a blood spill 3½ mont
earlier. The apparently long incubation period in Case
may, in fact, reflect that an unrecorded exposure too
place in the intervening time, since she *did* receive tw
doses of hepatitis B immune globulin (HBIG) after th
known exposure 8½ months previously. The one dose
immune globulin (IG) received by Case 2 would b
considered acceptable treatment according to recom
mendations from the national Immunization Practice
Advisory Committee,[8] since the serologic status of th
patient was unknown, but such prophylaxis might hav

Table 2
Reported Hepatitis B in Health Care Personnel, by Occupational Group, Arizona 1980—1982

	Employer			
Occupation	Hospital	Nursing Home	Clinic/Office Practice	Other
Physician/extern	3		3	
R.N./L.P.N.	8	3	2	1
Nursing assistant/aide	5	1		
Med. tech./lab. tech./phlebotomist	5		1	2
Respiratory therapist	2			
Radiology tech.	2			
Dentist/hygienist			2	
Other (janitor, paramedic, inspector, pilot)	2			2
Total	27	4	8	5

Source: Bureau of Disease Prevention and Epidemiology, Arizona Department of Health Services

Table 3
Information on Hepatitis B in Four Hospital Employees, Arizona 1980—1982

Case	Occupation	Assignment	Type of Exposure	HBsAg Status of Blood Source	Postexposure Prophylaxis	Incubation Period	Days Lost from Work
1	RN	ICU	Blood splash into face	Unknown	None	2½ mos.	22
2	LPN	Medical/ surgical floor	Needle puncture wound	Unknown	IG-1 dose	2½ mos.	30
3	RN	ICU	Needle puncture wound	Positive	HBIG-2 doses	8½ mos	60
4	RN	Dialysis	Blood spill	Positive	None	3½ mos.	82

en inadequate to prevent hepatitis B.

Jsing the methods described earlier, we calculated e dollar cost to the employer (i.e., the hospital) for ch of these four cases of hepatitis B (Table 4). The edical care costs include procedures undertaken for ophylaxis as well as testing and treatment for the ease. For Case 1 we could not obtain the treatment ormation from her physician so the costs are in- mplete. The medical costs for Case 4 include workers' mpensation payments of $2839 for five days of hospital re; the other three cases were not hospitalized. nsidering all four cases, the mean cost to the hospital s $7844 per case.

scussion

The incidence of clinical hepatitis B among hospital rkers has been previously reported in the range of 100 150 cases per 100,000 employees per year.[2,3,5,9] These ures come primarily from teaching hospitals or large ban hospitals near low-income and minority resi- ntial areas. In contrast, the nonfederal hospitals in izona serve a population which is predominantly ite and middle-class. The patients probably do not clude large numbers of persons known to be carriers hepatitis B antigen: refugees from Southeast Asia, ers of illicit parenteral drugs, male homosexuals, or stitutionalized mentally-retarded clients. Patients in modialysis units represent the only high risk group en in significant numbers in Arizona facilities. erefore, it is not surprising that the reported rate of epatitis B in employees of urban Arizona hospitals 2/100,000/year) is lower than rates reported from her more urban states. However, the risks to hospital employees and to all health care workers in a state like Arizona still are almost four times greater than the rate in the general population of the state.

Our information was obtained chiefly from reports filed with the health department. In addition to physicians and dentists in private practice who may hesitate reporting their own hepatitis B infections, health care employees may decline to report illnesses which reflect on their own job performance or which may hinder future employment. One of the four cases documented by us as probably work-related did not appear in health department records. Using data from any single source is not adequate for identifying clinical cases of hepatitis B. Since studies have demonstrated that 70 to 80 percent of hepatitis infections are inapparent or subclinical,[4,10] the magnitude of the hepatitis problem is considerably greater than what we have demonstrated. The annual attack rate in health care workers could exceed 100 cases per 100,000 if unreported symptomatic cases and subclinical cases could be ascertained and counted.

The costs of caring for the four cases of hepatitis B reported in our study are higher than the costs presented in other analyses, primarily due to the inclusion of costs associated with time lost from work. Since hospitals must pay for sick leave for ill employees plus hire a substitute worker for the same period, we believe the value of lost time is a significant cost to the hospital. Thus, the mean cost for our four hepatitis B cases is $7844, including $3712 for time lost. In an interview, Grady from the Massachusetts State Department of Health presented figures which gave a national

Table 4
Costs Associated with Four Cases of Hepatitis B in Hospital Employees, Arizona, 1980—1982

Case	Medical care	Cost Component Value of work time lost	Workers' compensation	Total
1	$ 238	$1695	$1539	$ 3472
2	2494	4685	2542	9721
3	1478	1770	1556	4804
4	3376	6698	3302	13376
Mean	1897	3712	2235	7844

estimate of $1875 per hepatitis B case for time lost plus $3300 for hospitalization, for a total of $5175 per case.[11] In the same article, Hamilton from Duke University Medical Center estimated an average cost of $1272 for outpatient medical care plus workers' compensation for each employee case of hepatitis B.

From this brief analysis of reported cases of hepatitis B in Arizona the significance of this disease to health care workers and to their employers is apparent. Health personnel in all settings, but particularly those working in hospitals, are at a more than four-fold higher risk of contracting hepatitis B than are persons in the general population. The infected employee may develop a serious illness, resulting in hospitalization and weeks to months of convalescence. If he is one of the acute cases who becomes a chronic carrier of hepatitis B surface antigen, his employment opportunities may be severely restricted. The time lost from work, medical care costs, and workers' compensation payments represent a considerable expense to the employer. Primary prevention, including more stringent needle stick precautions, preexposure vaccination of high risk personnel with hepatitis B vaccine, and proper post-exposure treatment of reported exposures should significantly decrease the incidence of this disease, its associated morbidity and mortality, and the resulting medical and nonmedical expenses.

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Neurology

Recent Experience with Brain Abscess at the Barrow Neurological Institute

Daniel G. Nehls, M.D., CPT MC USA
Robert M. Crowell, M.D.

Editors:
James L. Frey, M.D.
J. Michael Powers, M.D.
Lawrence Z. Stern, M.D.

Abstract

A retrospective study was performed on patien admitted to the Barrow Neurological Institute over th past five years with the diagnosis of brain absces Important statistics are presented and compared recent series. Aspects concerning etiology, diagnosi laboratory and radiological studies, medical therapy ar surgical therapy are discussed.

Key Words: Brain Abscess

Introduction

Significant advances have been made in the diagnos and treatment of brain abscess. The development computed tomographic scanning (CT) has had a dr. matic impact. New antibiotics are available, and surgic modalities include aspiration, drainage and excision.

From: Division of Neurological Surgery, Barrow Neurologic Institute, St. Joseph's Hospital and Medical Center. Reprint requests Daniel G. Nehls, M.D., c/o Editorial Office, Barrow Neurologic Institute, St. Joseph's Hospital and Medical Center, 350 West Thom Road, Phoenix, Arizona 85013. The views of the authors are their ov and do not purport to reflect the position of the Department of th Army or the Department of Defense.

Table 1
Patients Treated For Brain Abscess at Barrow Neurological Institute 1975-1981

logy	Organism	Location	Treatment	Outcome
Thoracogenic	Nocardia	Occipital	Excision	Minor Field Defect
Sepsis	*E. coli*	Parietal	Medical	Lost to F/U
CHD	Aerobic Gram Negative Rod	Temporal Bilateral	Drainage	Death
Mastoiditis	*E. coli+ P. mirabilis*	Temporal	Excision	Intact
Otogenic	Mycobacteria + Nocardia	CP Angle	Excision	Intact
Odontogenic	Streptococcus	Frontal	Excision	Mild Hemiparesis
Extension	Mucormycosis	Frontal	None	Death
Meningitis	*H. influenza* Streptococci *Eikenella corodens*	Parietotemporo-Occipital	Aspiration + Excision	Developmental Delay
Gunshot Wound	*Eikenella corrodens*	Holohemispheric	Drainage	Death
Trauma 15 Years PTA	Sterile	Frontal	Excision	Mild Leg Paresis
Skull Fracture	*E. coli*	Frontotemporal	Excision	Vegetative
Postoperative	*Staph. aureus*	Cerebellum	Excision	No new deficit
Postoperative	*Staph. aureus*	Frontoparietal	Drainage	Mild Hemiparesis
Abscess in Metastisis	Sterile	Frontal	Excision	Mild Hemiparesis
Unknown	Histoplasma	Parietal	Excision	Intact
Unknown	Fusobacterium	Cerebellum	Excision	Gait Ataxia
Unknown	*Bacteroides oralis*	Occipital	Excision	Hemianopsia
Unknown	Unknown	Occipital	Medical	Intact
Unknown	Unknown	Temporal	Medical	Intact
Unknown	Unknown	Parietal + Occipital	Medical	Intact
Unknown	Unknown	Frontal	Drainage Excision + re-excision	Apahsia + Hemiplegia

ethods

Hospital records of patients treated for brain abscess the Barrow Neurological Institute during the post-CT ars of 1975 through 1981 were reviewed, and follow up ormation was obtained from the records of sub- quent admissions or from attending physicians' cords. CT scans and other diagnostic procedures were viewed. Twenty-one patients were identified, and ta are presented in Table 1. Major series published ring the last ten years were reviewed.[1-10]

cidence

Brain abscess is a relatively rare cause of neurologic sease. McClelland et al.[6] reported a declining inci- nce of five per million population to three per million pulation between 1947 and 1976. Most studies report male preponderance. In the present series, this ratio s 2.5 to 1. Most studies reporting incidence based on age show a bimodal distribution with peaks curring in the first or second, and fifth or sixth cades.[1,4,8-9] The first peak has been attributed to the equent occurrence of brain abscess in children with ngenital heart disease.[8] The peak incidence in our ries occurred in the fifth decade and a minor peak curred in the first two decades.

thogenesis

The most common etiologies for brain abscess, in der of prevalence, are direct extension, metastasis and auma. Direct extension and metastasis account for the ajority of abscesses, comprising almost 70% of all abscesses. Etiology is often unknown, and this represented 32% of the cases in the present study. This is most likely due to early detection and therapy which eradicate the source of infection.

Direct Extension

Direct extension of an infectious process accounted for 19% of brain abscesses in the present series. Brain abscesses may arise by direct extension from the ear, mastoid or paranasal sinuses, teeth, skull or orbit. Otogenic brain abscesses are by far the most common type caused by direct extension and most frequently occur in the temporal lobe or cerebellum. The importance of anaerobes in otogenic brain abscesses was recently stressed by Ingham et al.[11] They were able to culture aerobes in only six of ten otogenic brain abscesses, whereas they were able to culture anaerobes in all ten, usually *Bacteroides fragilis.*[9-10]

Sinogenic brain abscesses may arise from the paranasal sinuses. Frontal and ethmoid sinus infections most frequently cause frontal lobe abscesses. Sphenoid sinus infections may cause temporal lobe or intrasellar abscesses. According to de Louvois,[12] nonanaerobic streptococci are the most common organisms responsible for sinogenic abscess.

Rare causes of brain abscess due to direct extension include meningitis([1,3,7,8] and present series), orbital cellulitis,[1] carcinoma of a sinus,[3] tonsillitis[7] and direct extension of orbital mycormycosis (present study).

Metastatic

In the normal host, organisms of high virulence are usually responsible for the development of brain abscesses. These would include such organisms as *Staphylococcus aureus*, bacteroides, streptococci and mixed organisms. The chest is a common source of metastatic brain abscesses. Pulmonary alveolar proteinosis predisposes the host to nocardia, as was the case in one patient included in our series. Other sources of metastatic infections include gastrointestinal, genitourinary, bone and cutaneous infections.

In abnormal hosts, organisms of low virulence, which have a high frequency of transient bacteremia in normal individuals, are responsible for many metastatic brain abscesses. Microaerophilic and anaerobic streptococci are common organisms. Shunts which allow blood to bypass the filtering action of the lung predispose to the development of brain abscess. The incidence of brain abscesses in patients with cyanotic heart disease is reported to range between four percent and six percent. Patients with immunosuppressed states due to congenital disease, malignancy, steroid or immunosuppressive therapy are at increased risk of developing metastatic brain abscesses.

Metastatic abscesses show no predilection for any particular lobe. Their relative frequencies correlate with the relative sizes of the lobes of the brain. They tend to occur at the corticomedullary junction in much the same way that metastatic tumors occur.

Traumatic

Traumatic brain abscesses may be due to open skull fractures, penetrating wounds or previous surgery. According to de Louvois,[12] *Staphylococcus aureus* is the most common organism in both traumatic and postoperative abscesses. It is not uncommon to develop an abscess years after trauma. One patient in our series developed a frontal lobe abscess near retained bone fragments from orbital trauma which had occurred 15 years prior.

Diagnosis—Clinical Aspects

An abscess produces a clinical picture dependent upon its location and its effect upon intracranial pressure. Table 2 is a compilation of the frequency of signs and symptoms in the series reporting these figures.

Systemic Manifestations

A fairly common systemic sign is fever, which was observed in 36% of the cases we studied. The absence of fever does not exclude a brain abscess.

Generalized Neurological Manifestation

Of the generalized neurological symptoms, headache was most common. It was present in 64% of patients. Changes in mental status, as manifested by memory difficulty, alterations of level of consciousness or personality change were present in 50% of cases. We observed an 18% incidence of nausea and vomiting. Papilledema was uncommon as well, probably due to early detection of abscesses in our series.

Table 2

Signs and symptoms of brain abscess. The figures represent t percentage of patient in each study which developed the si or symptom in each of the above categories.

	SYMPTOMS					SIGNS						
	HEADACHE	N + V	SEIZURE	Δ IN MENTAL STATUS	OTHER	FEVER	NUCHAL RIGIDITY	PAPILLEDEMA	PUPIL ABNORMAL	FIELD DEFECT	HEMI-PARESIS	CEREBELLAR
MORGAN at al	70	24	32	58		6	25	23	10	7	38	11
SAMSON + CLARK	64	50	33	48		52	43					
McCANN at al	84	10	23	55		77	19				45	
YANG	97	85	20	38	6	57	16	56	21	13	44	38
PRESENT STUDY	64	16	36	50		36	9	16	0	27	22	14
	76	37	29	50		46	23	32	10	16	37	21

Focal Neurological Manifestations

Hemiparesis is a frequent focal neurological findin In the present series, visual field defects were al common because of the frequency of occipital, pariet and temporal lobe lesions in our series. Seizur occurred in 36% of patients in our series. Of the seve patients who developed seizures, five had abscesses the parietal or frontal lobes. The remaining two ha temporal lobe abscesses.

Congenital Heart Disease

The diagnosis of brain abscess in patients wi congenital heart disease presents a special problem du to a relative paucity of symptoms. According Raimondi,[13] the triad of headache, nausea and seizures usually present at least in part in most cases of bra abscess, and symptoms are usually present for seve days to six weeks. Papilledema and lateralizing signs a common. Raimondi states that headache in a child wi cyanotic heart disease is a brain abscess until prove otherwise.

Diagnosis—General Laboratory

In general, laboratory investigations in cerebi abscess reflect the presence of infection, but the tes are neither specific nor conclusive. The white blood ce count (WBC) was found to be abnormal in about 70% cases in the present study. The erythrocyte se imentation rate (ESR) is a useful test in differentiati between brain abscess and other mass lesions. The ES was abnormal in 75% of cases in both the present stu and that of Klug and Ellams.[3] We observed a mean ESR 55 with a standard deviation of 36. The highest valu noted was 120, and only three of 12 values were belo 20. In the presence of cyanotic heart disease, howeve the ESR is not a reliable indicator, as it is almost alwa quite low.

The suspicion of a brain abscess is a contraindicatio to lumbar puncture (LP). There is a real danger of pr cipitating a catastrophic deterioration due to herniatio or rupture. French and Chou[2] stress this danger. Th identified eight deaths in their series in which lumb puncture was implicated. They also point out th unreliability of the results of an LP, includi bacteriologic studies. Other authors have commente upon the danger[1,5,10] and unreliability[1,5] of lumb puncture in brain abscess.

Table 3
Diagnostic Characteristics of Ring Enhancing Lesions Based Upon Tiaworabun[9]

ion	Ring Enhancement	Space Occupying	Multiple	Edema	Hypodense Area	Hyperdense Area
scess	++++	+++	++	++++	+++	-
oblastoma	++++	+++	—	++++	+	+
stic Tumor	+	+++	-	+++	+++	—
crotic Tumor	+	+++	+	+++	+++	—
arct (Hemorrhagic)	+	+	+	+	—	+
matoma	+	+	+	+	+	

+ = Marked, +++ = Common, ++ = Often, + = Possible, - = Improbable, — = Very Improbable

agnosis—Radiology

ull Films

Skull films were obtained in 15 patients in the present ries. Abnormalities were demonstrated in seven of ese. Skull films may provide information about ictures, osteomyelitis, sinusitis and otitis, and are commended when trauma, sinusitis or otitis is sus- cted.

ain Scan

The CT scan has largely supplanted the brain scan cause it provides more information and is more sen- ive.[14]

igiography

Angiograms can be useful in the diagnosis and anagement of brain abscess when surgery is con- mplated. In the present series, 91% of the arteriograms ere abnormal. Nielsen and Halaburt[15] describe the giographic findings in brain abscess. They are, in der of decreasing frequency: 1) displacement of teries, 2) an avascular lucency, 3) segmental arterial nstriction, 4) displaced veins and 5) a capsular blush. ood et al.[16] state that the vascular stain reflects the psule thickness. Therefore, an arteriogram may ovide useful clinical information about the nature of e abscess capsule, when a capsular blush is present.

omputed Tomography

Computed tomography has revolutionized the agnosis and management of brain abscess. It provides tailed information on the number, location and aracter of intracranial masses. Contrast studies must performed, and the diagnosis of brain abscess is ldom made without them. Serial scans provide much formation regarding the progression of an abscess and response to therapy.

The typical CT appearance of a brain abscess is that of a ass lesion with a central zone of lucency, with an tensive zone of perifocal edema and ring en- ncement.[1] Loculations and septae may be present thin the mass. Edema adjacent to the lesion is almost vays present and is usually moderately severe.[17] The ass effect, however, is often less than expected from e marked edema. Following the administration of ntrast, ring enhancement usually occurs.[17] However, ring enhancement is not an accurate indicator of capsule development.

Ring enhancing structures are common findings on CT scans and are by no means diagnostic of brain abscess. Table 3 presents the CT features in the differential diagnosis of lesions that may resemble a brain abscess.

Treatment

Brain abscess is a heterogenous disease, and many forms of treatment are available. Therapy should be tailored to the individual aspects of each case.

In the present series, most patients who could tolerate surgery underwent excision of their abscess, and those who could not, underwent aspiration. Four patients were treated nonsurgically. Mortality in patients undergoing a surgical procedure in the present series was 13%, compared to operative mortalities of 17%[1] to 53%[6] in the series reviewed. Overall mortality was 14% in the present study, compared to a range of 17%[1] to 70%[1] in the literature. Of the three deaths, one occurred in a patient

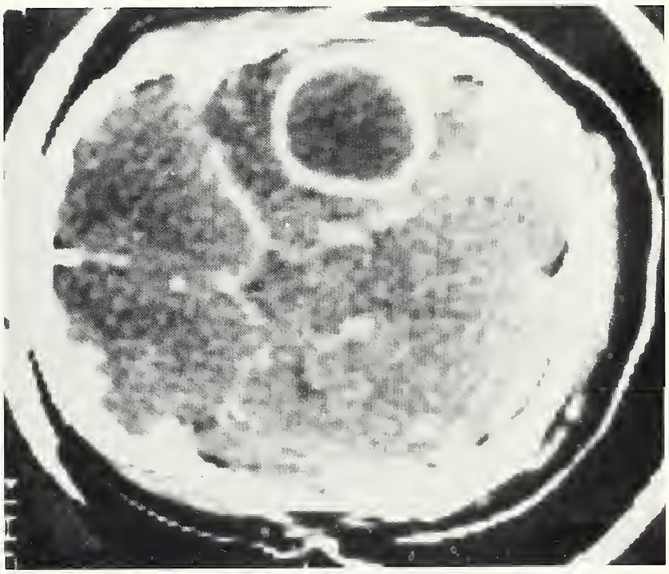

Figure
Typical appearance of a brain abscess. Note the ring enhancing hypodense lesion with perifocal edema.

with fulminant mucormycosis who was not treated after the brain abscess developed. Another occurred in a patient with massive intracranial damage secondary to a gunshot wound, and the third occurred in a 30-year-old woman with congenital heart disease, bronchiectasis and bilateral temporal lobe abscesses who could not tolerate major surgery. The results compare favorably with other series.

Aspiration

Aspiration is a valuable technique in the management of abscesses in critical locations, and in patients whose medical condition precludes intracranial surgery. The advantages of aspiration include the simplicity and speed with which it may be performed. The bacteriology and the nature of the capsule may be ascertained by aspiration. Aspiration may provide rapid relief of elevated intracranial pressure on an emergency basis. Sterotaxic aspiration may prove to be an excellent method of therapy for selected cases.

There are several occasions when aspiration is not effective. These include: abscess rupture, chronic abscess, presence of a foreign body, posterior fossa abscess and concomitant presence of an empyema.

Excision

Many consider total excision to be the definitive procedure in the surgical therapy of brain abscess.[8] Excision allows prompt decompression in cases with progressive deterioration from mass effect. A formal craniotomy allows direct visualization and inspection. One can deal with multiloculations and foreign bodies. Excision provides immediate treatment of the disease and often shortens the length of the illness.

There are major disadvantages to excision, however. Many patients cannot tolerate a craniotomy. Multiple abscesses separated by large distances are not easily treated by excision. Tiyaworabun et al.[9] have observed greater morbidity in patients treated by excision compared to aspiration or drainage. They found a two to three fold increase in mental disorders, hemiparesis, visual defects and dysphasia in the patients treated by excision as compared to those treated by aspiration or drainage. The only postoperative difficulty more prevalent in those treated by aspiration or drainage was seizure.

Nonsurgical

Rosenblum et al.[18] have established guidelines for nonsurgical therapy based upon their experience with eight patients treated successfully. A trial of antibiotics is recommended only in certain specific instances. It may be considered in patients who present poor surgical risks, in cases of multiple distant abscesses and in abscesses located in deep or dominant locations. In regard to abscess size, Rosenblum, et al[18] found a critical diameter of about three centimeters. Abscesses larger than this are unlikely to respond to nonsurgical therapy. In the nonsurgical therapy of brain abscesses, careful monitoring of the patient's clinical condition, and frequent CT scans are needed to follow the progress of the abscess.

Table 4
Recommended Initial Empiric Antibiotic Therapy of Brain Abscess
(Based Upon De Louvois and Everett and Strausbaugh)

Etiology	Antibiotic Regimen
Paransasal Sinusitis	Penicillin G +/- Chloramphenicol
Otogenic	Penicillin and Chloramphenicol+/- Metror dazole or Ampicillin
Metastatic	Multiple Broad Spectrum Antibiotics Including Penicillin G
Traumatic	Methicillin +/- Chloramphenicol

Antibiotics

Prior to the identification of the organism, and tl determination of sensitivities, presumptive therapy mu be started. The relationship between etiology ai bacteriology has been stressed by de Louvois.[12] Fron lobe abscesses secondary to paranasal sinusitis a usually caused by nonanaerobic streptococci. Tempoı lobe or cerebellar otogenic abscesses usually conta mixed flora including anaerobes. Abscesses occurri after trauma or surgery are most likely due *Staphylococcus aureus*. Cryptogenic or metastatic a scesses usually contain nonanaerobic streptococci mixed flora.

Everett and Strausbaugh[20] recently published an e tensive review of antimicrobial agents and the centı nervous system. Their recommendations for empiı therapy, with modifications based upon de Louvois[12] a presented in Table 4. Therapy should be modified bas upon Gram stains and culture reports after aspiration excision. Therapy is recommended until all sympton signs and radiologic studies indicate resolution of tl abscess, which usually is a minimum of four weel Several new antibiotics are being considered for tl treatment of brain abscess. These include parenteı trimethoprim-sulfamethoxazol preparations for tl treatment of nocardia abscesses, parenteral and oı metronidazole against anaerobes, and moxalacta against Gram negative and anaerobic organisms.

Antibiotic penetration is an important aspect antimicrobial therapy in infections of the centı nervous system. Black et al.[19] reported therapeutic co centrations of chloramphenicol, methicillin aı penicillin in the abscess fluid of patients with suitab blood levels of these antibiotics. Nafcillin did n penetrate in this study. Ampicillin has been shown penetrate into abscess fluid as have clindamycin aı trimethoprim-sulfamethoxazol.[20]

Steroids

The use of steroids in the therapy of brain abscess controversial. Steroids may reduce antibiotic pen tration and impair capsule formation. Roseblum, et al advocate the avoidance of steroids in the nonsurgi eatment of brain abscess where penetration is ssential. However, when surgical intervention is lanned, steroids may improve the patients pre-perative status by reducing edema.

ognosis

Factors which may affect the prognosis include the ondition of the patient and the nature of the abscess. ne of the best prognostic indicators is the condition of e patient on admission. Yang[10] reported a 65% mor-lity in patients who developed signs of herniation. The eurologic grade is a strong predictor of final outcome. everal authors have reported motrality based upon ade.[6-8] The combined figures for mortality from these ries are as follows: grade I (alert), 11%; grade II rowsy), 28%; grade III (stuporous), 46%; and grade IV omatose) 58%. In the present series the mortalities for ades I through III were 0%, 17% and 50% respectively. o patients were admitted in grade IV.

onclusion

Recent experience with the treatment of brain abscess the Barrow Neurological Institute has been quite vorable. Mortality rates are below those of recent ries. New techniques such as stereotaxic aspiration, d new antibiotics may reduce mortality and morbidity rther. CT scanning has made a dramatic impact upon iagnosis and management.

Brain abscess is a treatable disease when the diagnosis made early in the course of the illness. A high index of spicion is essential in making the diagnosis. Patients spected of harboring a brain abscess require prompt eurosurgical and infectious disease consultation. ortality rates may be further improved by earlier cognition and treatment.

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Obstetrics &
Gynecology

Premature Labor

John P. Elliott, M.D.
Judy Harmon, R.N., M.S.

Editors:
Daniel F. O'Keeffe, M.D.
John Elliott, M.D.

Abstract

Premature labor and resulting premature delivery is associated with 75% to 85% of perinatal mortality and a large percentage of fetal morbidity. Efforts to reduce the 6% to 8% incidence of premature labor have been generally unsuccessful. Recently, a comprehensive program of education for health care providers and patients has reduced the rate of prematurity to 2.4%. These encouraging results should motivate other areas of the country to implement similar programs of patient education, early detection of signs and symptoms of premature labor, and early aggressive treatment of premature labor.

Key Words: Premature labor, Prematurity, Labor prevention

Premature labor represents a situation where labor begins with or without rupture of membranes at less than 37 weeks of gestation. It occurs in 6% to 8% of all pregnancies in the United States[1] and this incidence has remained stable for many years. Premature labor associated with 75% to 85% of all perinatal mortality ar a large percentage of morbidity. This profound impa on our perinatal care singles out premature labor f emphasis in programs of prevention and treatment.

The diagnosis is made when the patient has bee having uterine contractions, with or without pain, in regular pattern, at a frequency of two in ten minut lasting for one hour, or cervical change with ar frequency of contractions. It is *not* appropriate to wa for cervical change to occur before making the diagnos since this delays potentially effective treatment.

Reacting to the development of premature labor h not changed the incidence of preterm birth in the U.S It appears that only with a program directed towa avoiding premature labor when possible and increasir awareness of premature labor, thus allowing earli recognition and treatment in other cases will we be ab to improve the adverse impact that premature labor h on our population.

An attempt to reduce or eliminate premature lab involves a multipronged effort involving physician nurses, dieticians, social workers, pregnant patients, ar indeed many in the community. It involves com munication between health care workers and patient Several factors need to be stressed in this compre hensive assault on premature labor. First, patients at hig risk for premature delivery that have correctable facto before pregnancy or early in pregnancy should b identified, e.g., incompetent cervix, uterine anomalie or inadequate luteal phase can be corrected surgically medically to offer a better outcome. Severe matern diseases such as diabetes mellitus, renal disease or hea disease can be placed in good control before pregnan is attempted. Second, patients should be educate about early signs and symptoms of premature labo These would include dull low backache, pressure, pain; intermittent lower abdominal or thigh pai intestinal "cramping" with or without diarrhea indigestion; and change in vaginal discharge. Thir health care providers should be educated to recogniz these signs of premature labor and should instru patients to come immediately for evaluation. It is n appropriate to observe the patient at home in hopes th the symptoms will go away. Fourth, an aggressiv program should be implemented for making th diagnosis of premature labor. The evaluation shoul include careful history, measurement of fundal heigh determination of fetal lie and presentation, speculu examination to evaluate the status of the membrane and if no evidence of ruptured membranes, a gent bimanual cervical examination. The patient should als be observed for a period of time on the fetal monitor t further evaluate contractions and fetal status. Fifth, labor is diagnosed, early aggressive therapy consisting I.V. hydration (500 cc. over three hours), bed rest on le side, early tocolysis (magnesium sulfate or bet sympathomimetic agent), and early transport of th patient to a tertiary center for best neonatal outcom

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From Division of Maternal-Fetal Medicine, Good Samaritan Medical Center, Phoenix, Arizona. Reprint requests to John P. Elliott, M.D., Division of Maternal-Fetal Medicine, Good Samaritan Medical Center, 1111 East McDowell Road, Phoenix, Arizona 85006.

he advantages of maternal transport over neonatal ransport have been documented.[2,3]

The success of this comprehensive type of program as been documented by Herron, et al.[4] In a one-year eriod the rate of prematurity was reduced from 6.5% to .4%, which was the result of increasing the proportion f patients who were suitable for early and effective ong-term tocolytic therapy. Several programs for revention of preterm delivery are currently in progress n California. All have in common three components.

First, there is a systematic way of screening at-risk atients. Second, there is a formalized program of atient education in the signs and symptoms to report. inally, there is a program of education for the nurses nd physicians screening and providing care for these t-risk patients. The program is aimed at promotion of mely and appropriate response to patient reports of ymptoms.

Special features of these programs include weekly isits after 20 to 22 weeks and telephone and/or home isit follow-up for those who experience preterm labor. ather than increasing "nuisance" calls, it is reported to educe them. Programs encompassing all three omponents and special features of frequent follow-up re on-going presently in clinic and private populations.

Preliminary results with these comprehensive rograms have been encouraging, with the incidence of rematurity decreasing for the first time. These programs should be expanded and implemented in other eographical areas so that a nationwide impact can be ade.

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Oncology

Aplastic Anemia

John F. Kessler, M.D.

Editors:
David S. Alberts, M.D.
Ellen Chase, B.S.

Introduction

Aplastic anemia is most simply defined as peripheral pancytopenia in the presence of a hypocellular bone marrow. The disease is the common expression of diverse underlying etiologies and is broadly classified as constitutional or acquired. This disease affects all age groups with a definite increase in individuals over the age of 50.[1] Overall the sexes are equally affected.[1] The incidence of aplastic anemia varies greatly, being two to five times more common in the Far East than in Europe or North America.[2] In the United States there are about 5,000 new cases each year.[3] The variable geographic incidence reflects genetic as well as environmental factors. There are a variety of etiologic agents implicated in the development of aplastic anemia, but the

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From: University of Arizona Cancer Center, Tucson, Arizona 85724.

mechanisms by which they induce this disorder remain unknown.

Pathophysiology

A number of insights into the pathophysiology of aplastic anemia have been gained from clinical and laboratory experience. Considerable evidence demonstrates the presence of a pluripotent hematopoietic stem cell capable of self-renewal and, under the appropriate microenvironmental influence, differentiation along the individual hemopoietic cell lines.[4-6] Aplastic anemia may result from quantitative or qualitative stem cell defects, defective microenvironmental influences, or immune mediated events which adversely affect hematopoiesis.

The most compelling argument for a stem cell defect comes from the bone marrow transplantation experience in aplastic anemia. In twins (syngeneic transplantation), simple marrow infusion without a preconditioning regimen results in successful engraftment in about one half of the cases.[7,8] This approach replaces missing or defective stem cells with normal donor cells. In the remaining unsuccessful syngeneic grafts, preconditioning with large doses of cyclophosphamide nearly always results in successful engraftment. In these cases, microenvironmental or immunologic factors may be involved and modified by preconditioning.

Further observations supporting a stem cell defect include: the demonstration of decreased *in vitro* colony growth from bone marrow suspensions obtained from aplastic patients,[1,9] the development of murine strains with qualitative stem cell defects and expressing aplastic anemia,[10] and the increased incidence of clonal disorders (paroxysmal nocturnal hemoglobinuria and acute myelogenous leukemia) in aplastic anemia patients.

The transplant experience has provided evidence against microenvironmental influences being responsible for this disorder. In successful allogeneic transplanting the stem cells are from the donor, while the stromal elements have been shown to be of recipient origin.[11] More recently, however, the *in vitro* microenvironment in long-term bone marrow cultures of several transplant recipients has been demonstrated to be of donor origin.[12] This would suggest either the replacement of a defective microenvironment or of a common stem cell shared by both microenvironmental elements and hematopoietic cells.

The possibility that immune mechanisms may predominate in some individuals also comes from the transplant experience. As previously mentioned, some syngeneic transplants are successful only after cyclophosphamide preconditioning. Presumably this is due to an immunosuppressive effect that then allows stem cells to function normally. Similarly, immunosuppression has permitted recovery of autologous marrow function in several cases involving allogeneic bone marrow transplantation.[2,13,19]

Early co-culture experiments demonstrated that lymphocytes from aplastic patients inhibited normal *i vitro* hematopoietic colony growth.[20-22] This observatio was initially thought to be due to an immunologic effe suppressing hematopoiesis, but was later shown to resu from sensitization to prior blood transfusions.[23, Appelbaum, however, co-cultured lymphocytes fro three aplastic patients with bone marrow from the syngeneic donors.[7] In these cases, transfusion ser sitization would not be a factor since HLA and mino histocompatibility antigens would be identica Lymphocytes from one patient did not inhibit dono cells, and subsequent bone marrow infusion wa successful. In the other two patients, colony growt inhibition occurred and preconditioning was necessa for successful engraftment, thus suggesting immun mediated suppression of donor stem cells.

Several investigators have demonstrated enhanced *i vitro* colony growth when T-lymphocytes are remove from aplastic bone marrow suspensions.[21,22,25- Although considerable technical difficulties still exis this finding has predicted clinical responses to immu nosuppressive agents.[25,26] Additional support fo immune suppression of marrow function comes fro successful treatment of aplastic patients with pote immunosuppressives including anti-lymphocyte ar anti-thymocyte globulin.[13,19,26,28,29]

Aplastic anemia can therefore be due to stem ce defects, immune mechanisms, microenvironment influences, or a combination of these and other facto

Etiology

In the pediatric population, constitutional ar acquired etiologies must be considered. The mo common constitutional variety is Fanconi's anemia wi characteristic skeletal, renal, and neurologic finding Other disorders with a high likelihood of developir aplastic anemia include amegakaryocytic thromb cytopenia, dyskeratosis congenita, Schwachma Diamond syndrome, and unclassified familial cases.[1,

Of the acquired cases, 40% are idiopathic and th remainder associated with an identifiable drug or toxi Chloramphenicol accounts for 61% of drug-associate cases.[1] Not to be confused with the dose-relate reversible marrow suppression of chloramphenicol, th idiosyncratic aplasia develops two to ten weeks fo lowing treatment and rarely up to six months later. Th risk of aplastic anemia following chloramphenic ranges between one in 11,500 to one in 40,000. Oth drugs and toxins are far less commonly associated wit aplastia and include phenylbutazone, gold salts, ber zene, insecticides, and other agents. Infectious caus include hepatitis (usually non-A, non-B), infectio mononucleosis, and influenza.[1,2,30]

The association of aplastic anemia with pregnan creates considerable management problems. Of patients reported by Fleming, 28 died and 13 survived. Eleven of the survivors had remission following deliver often within ten days. Three patients had recurrenc with subsequent pregnancies.

Treatment during pregnancy remains large upportive. The prognosis in aplastic pregnant patients is dversely affected by onset during, rather than receding pregnancy, and by hemoglobin con- entration less than 6 grams per deciliter at resentation.[32] Interruption of pregnancy should be onsidered in the presence of hemorrhage or recurrent nfections, although recovery of hemopoietic function annot be assured.

linical Features

The clinical manifestations depend on the degree of nvolvement of the individual cell lines. While pan- ytopenia is seen in the vast majority of cases, nvolvement of one or two cell lines can occur. Bleeding nanifestations such as petechiae, ecchymoses, and pistaxis are common initially. Patients may also present vith fatigue, weakness, tachycardia, palpitations, or, arely, congestive heart failure due to anemia. It is nusual for infectious complications to predominate nitially. Physical examination may reveal findings onsistent with one or more of the cytopenias, however, ymphadenopathy, hepatomegaly, and splenomegaly re absent and their presence should suggest another liagnosis.

Red cell morphology is normal to slightly macrocytic. he reticulocyte count is low especially after correction or the patient's decreased hematocrit. Bone marrow indings include hypocellularity which may be focal, ibrinous exudates, lymphoid aggregates, and increased eticulin. Significant fibrosis is absent. Additional aboratory findings include increased hemoglobin F, ncreased iron stores, normal B12 and folate levels and, xcept in some constitutional cases, normal chro- nosomes.

rognosis

Untreated aplastic anemia has a five-year survival of bout 35%, with 20% of patients surviving ten years. pontaneous remissions occur in about 10%, usually arly in the course of the disease. One half of the atients die within the first year, usually within the initial our months after diagnosis. Hemorrhage and sepsis ccount for the vast majority of deaths.[33]

The prognosis is independent of age, underlying ause, and effect of androgen treatment. Women fare lightly better than men. The presence of hemorrhagic nanifestations adversely affects survival.[33] Marked eductions in reticulocyte, neutrophil, and platelet ounts coupled with decreased bone marrow activity redict a worse clinical course.[33,40] The International plastic Anemia Study Group has established criteria for evere aplastic anemia (Table) which define a poor- rognosis group.[42]

reatment

General treatment measures include removal of all otentially offending drugs and toxins. Good oral ygiene and the avoidance of aspirin and intramuscular njections are of obvious importance. Menstrual flow xcesses can be suppressed by oral contraceptives or by ndrogens. More controversial measures include rophylactic antibiotics and the use of lithium carbonate, which occasionally results in improved neutrophil counts.[35] Infections should be treated early and aggressively, as in any compromised host, with broad-spectrum antibiotic coverage. Transfusions should be avoided except in life-threatening situations because of their potential detrimental effect on subsequent bone marrow transplantation.[36]

Table
International Aplastic Anemia Study Group
Criteria for Severe Aplastic Anemia*

Blood	1) Neutrophilis $< 500/mm^3$ 2) Platelets $< 20{,}000/mm^3$ 3) Reticulocytes $< 1\%$ (corrected)
Marrow	1) Severe hypocellularity or 2) Moderate hypocellularity with $< 30\%$ of residual cells being hemopoietic

**Any two or all three of the peripheral blood criteria coupled with either marrow criterion define severe aplastic anemia.*

Ideally, patients should be observed during the first seven to ten days while HLA tissue typing of the patient and family can be carried out and underlying disease processes excluded. Transfusion of packed red blood cells should be reserved for acute blood loss or symptomatic anemia. Controversy persists on the indictions for instituting platelet transfusions. The therapeutic balance is between the risk of serious hemorrhage on the one hand and the risks of sensitization leading to refractoriness to platelet transfusion and compromise of subsequent bone marrow transplantation on the other. In the absence of overt bleeding, a platelet count of 10,000 has been suggested as a reasonable level to maintain because of lack of significant capillary leakage above this level.[2,7] Family members should be avoided as transfusion donors because of the potential for sensitization of the recipient to minor histocompatibility antigens shared by the potential bone marrow donor and other family members resulting in an increased incidence of graft rejection. If bone marrow transplantation is not feasible, then family members may be used.

Androgens

Androgens have produced no clear improvement in hematologic parameters or survival in controlled trials.[38] However, a few patients, particularly long-term survivors, clearly benefit from androgens and will relapse to pretreatment values when androgens are stopped.[41] In severe aplastic anemia, androgens offer no survival advantage over supportive treatment.[42] Because of the one-to-three month delay required for androgens to demonstrate effect, the early mortality, and the lack of survival advantage with androgens in severe aplasia, definitive therapy should not be delayed for an androgen trial. Responses appear to be similar using various androgenic subtypes. Toxicities include virilization, fluid retention, and hepatic abnormalities.[39-41]

Immunosuppressives

In 1978 Speck reported a 67% survival in 27 severely aplastic patients treated with antilymphocyte globulin (ALG) with 100 to 550 days follow-up.[19] Additionally, 8 of 14 patients treated with ALG and haplotype transplantation survived 200 days to 4½ years. Interestingly, all of the transplanted patients had autologous bone marrow recovery with no permanent engraftments. Other studies using immunosuppressives have demonstrated responses in about 50% to 60% of treated patients. Of the responders, 75% are self-sustaining by four months after treatment.[13,19,28,29]

Recently UCLA reported the use of antithymocyte globulin (ATG) in aplastic anemia of varying severity.[29] Overall response was 53% with sustained improvement from 5 to 27 months. Responses, as in other reports, tended to be incomplete and occurred one to three months after initiation of treatment. Initiation of therapy earlier in the course of the disease was more often successful.

As mentioned previously, responses to immunosuppressives have been predicted by enhanced *in vitro* growth of marrow colonies following T-cell depletion. While this offers promise in selecting specific therapy for individuals, considerably more experience and refinements in technique are necessary before there can be broad clinical application. Additional prospective trials using immunosuppressives alone or in combination with other modalities will be needed to ascertain their efficacy and proper role.

Bone Marrow Transplant

Bone marrow transplantation is considered by some to be the treatment of choice when an HLA identical donor is available. It is an effective treatment modality regardless of the underlying cause of aplastic anemia. Particularly in severe cases, transplantation offers improved survival over supportive therapy.[34] In earlier transplant series, long-term survival occurred in 27% to 45% of cases, with death often occurring early due to graft rejection.[43] Storb has shown that major factors causing rejection are low numbers of infused marrow cells and prior transfusion of the recipient.[44] In 1980 Storb reported 90% engraftment with 75% actuarial two to six year survival in 30 untransfused patients.[36] This compared favorably with 65% engraftment and 50% survival in 81 previously transfused patients. From these data we can again infer that transfusion should be avoided if possible in potential transplant candidates.

Attempts to intensify conditioning regimens to reduce graft rejection in previously transfused patients have been successful, but increased graft-versus-host disease (GVHD) has resulted in no improvement in overall survival.[2] The addition of buffy coat preparations, which contain stem cells, to transfused marrow recipients has reduced graft rejection from 38% to 14%. Graft-versus-host disease, however, increased by 50% in this group.[45]

Age is an important factor in bone marrow transplantation with survival decreasing from 80% in those patients under age 30, to 50% in the 30 to 50-year-ol group.[2]

Bone marrow transplantation is the treatment o choice in identical twins where successful engraftment i expected and GVHD is absent. In other young patients (<30 years) with an HLA-matched sibling, particularly i those without prior transfusion, transplantation offer the most desirable option. For older patients and i those without compatible donors, immunosuppressiv therapy is promising and should be considered.

Summary

Aplastic anemia is characterized by peripheral pan cytopenia and a hypoplastic bone marrow. Although th pathophysiology can be multifactorial, it is most ofte due to a qualitative or quantitative stem cell defec induced by physical, chemical, immunologic or unknown agents. Treatment includes both supportive an specific measures including immunosuppression an bone marrow transplantation.

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Pediatrics

The Key to Diagnosing Atopic Dermatitis

Steven C. Shapiro, M.D.

Editor:
Steve Shapiro, M.D.

Abstract

Of the eczemas and immunopathies that affect the skin of children by far the most common is ordinary atopic dermatitis.

Atopic dermatitis can be regarded as a genetic disease, the expression of which is strongly influenced by environmental stimuli. Because it is an eczematous dermatitis, diagnosis is critically important.

One key to managing atopic dermatitis, is to identify the environmental factors which cause dermatitis to flare. Treatment can be designed accordingly.

This presentation will focus in 1) the diagnosis of atopic dermatitis, 2) flare factors which may influence course in individual children, and 3) therapeutic measures to treat the disease.

Of the eczemas that affect the skin of children by far the most common is ordinary atopic dermatitis. The intense itching of atopic dermatitis can make a child and thus his parents miserable. The rash begins in the first few months of life. Luckily, in many patients, it will clear with no scarring or other visible changes. In the meantime, treatment to be effective must begin by breaking the itch-scratch cycle.

Atopic Dermatitis has many causes—environmental, hereditary, emotional, and immunologic. Humidity, extreme cold or rapid changes in weather can cause an exacerbation of the dermatitis—so can stress, depression and over exertion.

From Director of Pediatrics, St. Joseph's Hospital and Medical Center, Phoenix, Arizona. Reprint requests to Steven C. Shapiro, M.D., St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona 85006.

Rash and Scales

Look for the rash on the cheeks, forearms, head, legs and trunk or diaper area (Figures 1 and 2). In older children, the flexur surfaces of the neck and wrists as well as the anticubital popliteal and axillary areas may be involved (Figure 3). Fine reddish-orange scales tend to cover the rash. The skin will crust over and weep in some patients. When the dermatitis reaches a chronic stage, areas of hypo- and hyperpigmentation may evolve. These areas gradually heal with no pigmentary changes. Lichenification is a common finding and indicates chronic scratching (Figure 4).

Difficult Diagnosis

In the first few months of life, diagnosis can be difficult. The most frequently confused eruption is seborrheic dermatitis. Seborrhea, however, usually begins on the scalp as cradle cap. The scales of seborrhea are oilier and more of a potato chip consistency than are those of atopic dermatitis. Also, seborrheic dermatitis runs a relatively short course. Other eruptions may be confused with atopic dermatitis. Contact dermatitis may be confined to a specific area and represents a particular configuration. Tinea infections are uncommon in infants and may be easily diagnosed by examining a ten percent potassium hydroxide preparation of scales from the rash. Acrodermatitis enteropathica is usually associated with hair loss, diarrhea, failure to thrive and severe dermatitis around the mouth and anus. Histiocytosis X can cause a trunk and scalp rash. The rash generally has a pexechial component and the child fails to thrive. Bone marrow and skin biopsies can confirm the diagnosis.

Secondary bacterial infections of the skin are common and they are rather resistant to therapy.

General Treatment Measures

The treatment of atopic dermatitis is multiphasic, and must take into account the factors that contributed to its onset. The patient's clothing should be of the softest cotton, for wool and polyester fabrics irritate the skin. The underwear should also be of cotton. Starch should not be added to the clothing when it is washed.

Antihistamines are good for sedation and should be given before bedtime to break the itch-scratch cycle. Diphenhydramine may be effective. The dosage is 3 mg/kg of body weight, given 30 minutes before bedtime. Aspirin may also be used as an effective antipruritic during periods of severe itching. During the day ice packs applied to the itching areas will relieve much of the itching.

Mainstay of Therapy

Topical steroids are the mainstay of therapy. Start with a nonfluorinated steroid, though, before going on to the more potent fluorinated steroids. As a rule, the patient will tolerate a steroid in an ointment base or in propylene glycol better than he will tolerate a steroid cream.

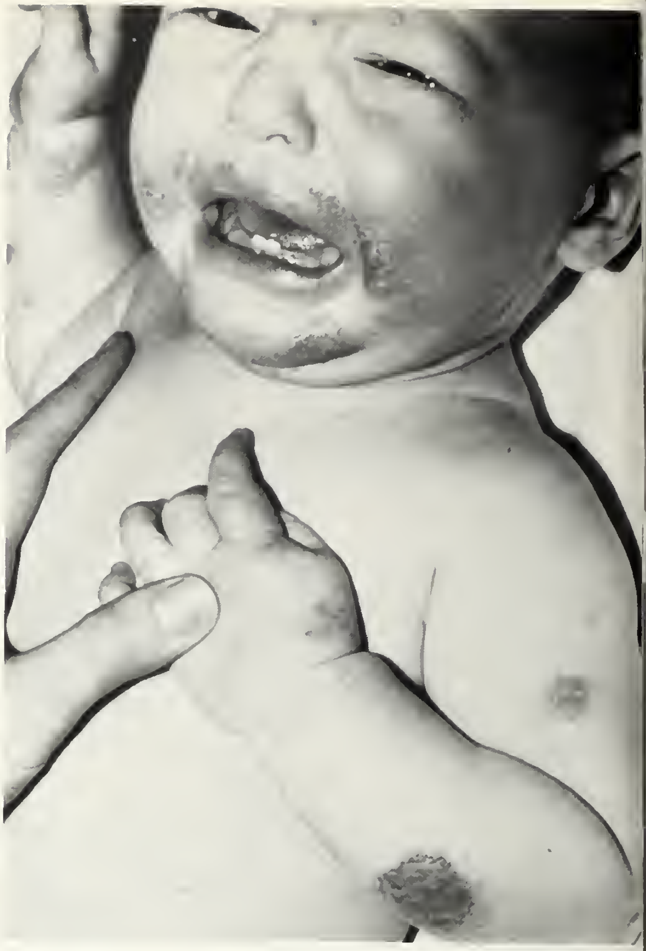

Figure 1

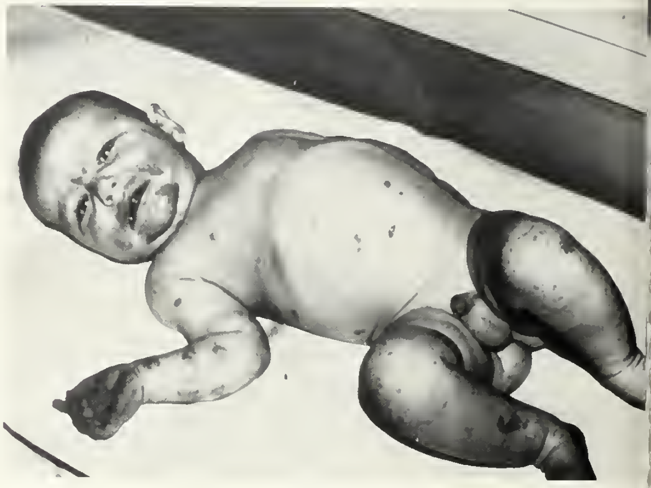

Figure 2

A reasonable treatment plan is to start with one percent hydrocortisone ointment. Have the parent apply a thin coating of the ointment to the rash three times a day. If one percent hydrocortisone is not effective within two weeks, change to a fluorinate steroid, such as 0.1% trincinolone acetonide, availabl as a cream, ointment, or in a propylene glycol solutio Start with the ointment base, applied three times a da For patients who do not respond to the triamcinolene i either the propylene glycol solution or ointment form try betamethasone valerate, a somewhat more poten topical steroid. Remember that some of the topica steroid will be absorbed, and for this reason the lea potent compound should be used first. Prepare

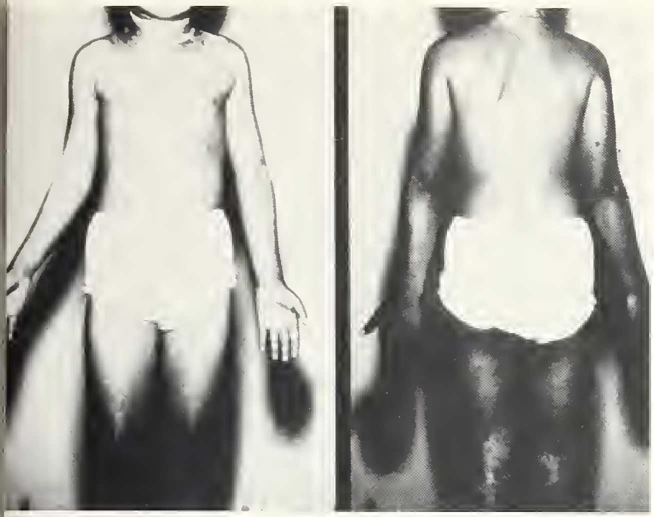

Figure 3

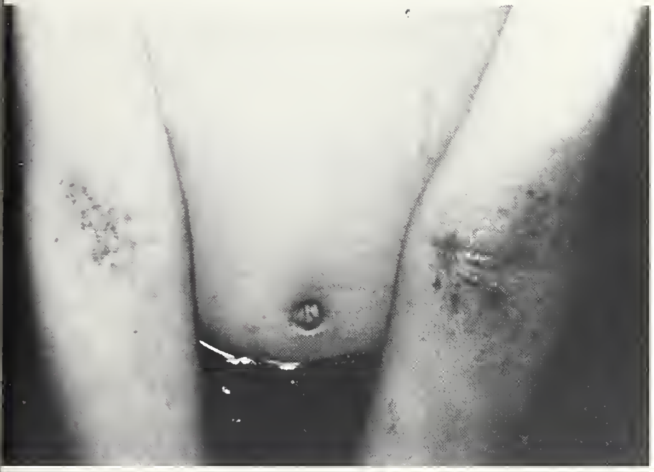

Figure 4

uorinated steroid ointments are less expensive than ose compounded individually by a pharmacist.

rt of Therapy

Warn the parents not to bathe the child in water more ften than once a week during the acute stages of atopic ermatitis. Bathing dries the skin and contributes to ching. A nonlipid cleansing lotion can be used to clean nd lubricate the child's skin. The parent should rub it n the skin until foaming occurs, then remove it by lotting with a soft towel. Topical steroids are then pplied.

After the acute stage of the dermatitis, the child may e bathed two or three times a week. Soap-free cleansng agents should be used for bathing.

Systemic antibiotics and Burrow's solution comresses are indicated if the dermatitic lesions become nfected or take on the appearance of impetigo.

Vhat to Expect

Atopic dermatitis runs a variable course. In about half f the children the rash clears by age two. In about one ourth of patients the rash clears by adolescence, and in ne remaining quarter of patients the rash tends to recur nd persist into adulthood.

Table 1
Differential Diagnosis of Generalized Chronic Eczematous Dermatitis

Xerosis
Ichthyosis Vulgaris
Irritant Dermatitis
Allergic Contact Dermatitis
Tinea Corporis
Miliaria
Parapsoriasis
Drug Reaction
Neuro Dermatitis
Photo Dermatitis
Scabies
Secondary Syphilis
Lymphoma

Table 2
Guidelines for the Diagnosis of Atopic Dermatitis

The atopic must have three or more basic featues:
Pruritus, typical morphology and distribution:
- Flexural lichenification or linearity in adults
- Facial and extensor involvement in infants and children
- Chronic or chronically-relapsing dermatitis
- Personal or family history of atopy (asthma, allergic rhinitis, atopic dermatitis)

Plus three or more minor features:
- Xerosis
- Ichythyosis
- Elevated serum IGE levels
- Early age of onset
- Tendency towards cutaneous infections, especially Staph aureus and Herpes Simplex
- Tendency towards nonspecific hand or foor dermatitis
- Nipple eczema
- Recurrent conjunctivitis
- Orbital darkening
- Facial pallor
- Anterior neck folds
- Itch when sweating
- Intolerance to wool and lipid solvents
- Food intolerance
- Course influenced by environmental or emotional factors
- White dermagraphism/delayed blanch
- Pityriasis alba

Family History

Approximately 70% of the patient with atopic dermatitis have a family history of atopic dermatitis, asthma or hay fever. The mode of inheritance has not been established.

Associated Findings

Dry, scaly hypopigmented eruptions around the cheeks, upper arms, upper back that is self-limited often lasting three or four years. This condition is called pityriasis alba. Generalized dryness, characteristic "goose bumps" are often seen. Other stigmata include Morgan's lines or Denny's fold, an extra pleat of the lower lid. Peculiar facial pallor, probably related to chronic vasoconstriction is noted in older patients with atopic dermatitis. Atopic cataracts and keratoconus have been reported.

Clinical Picture

The disease can be divided into three stages:

Infantile stage—This usually begins at approximately two to three months of age and persists for two years. This is a disease of the extensor aspects of the arms and legs, the scalp and the face are involved.

Childhood stage—the trunk and extremities are involved, particularly the flexural areas. Localization to the hands and feet are common. There is less redness but increased dryness and more lichenification.

Adolescent stage—The dermatitis is found primarily on the face, neck and flexural areas and lichenification is common.

Complications

Eczema herpeticum and vaccinum are devastating complications. All patients with atopic dermatitis should be isolated from any patients with herpes simplex or from any recently vaccinated individuals.

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Psychiatric Disorders

The Family and

Editor:
Thomas Bittker, M.D.

Abstract

As it shapes the life of the individual, chronic diseas can also shape the life of his family. Successfu adaptation to this major and lifelong stress depends o the critical balance between the needs of the afflicte individual for care and the need of all family members t grow. Based on a recent multidisciplinary conferenc held in Phoenix, Arizona, this presentation attempts t bring together the various themes, experiences, an approaches bearing on the family approach to chroni disease.

Key Words

Chronic Disease, Family, Family Therapy, Multipl Sclerosis—the Family, Social Work with Family, Socia Work and Chronic Disease.

Why the Family?

The family is an extension of our reproductive capacity. It is a mechanism for racial survival. Not all living things live in families. Family and family-like grouping appear to be characteristic of higher forms of life,[1] and to correlate with a prolonged dependence after birth, a highly developed central nervous system, and an

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From: The Department of Psychiatry, University of Arizona College o Medicine. Dr. Racy is Professor of Psychiatry. Reprint requests to Joh C. Racy, M.D., Department of Psychiatry, University of Arizona Healt Sciences Center, 1501 North Campbell Avenue, Tucson, Arizon 85724.

Chronic Disease

John C. Racy, M.D.

gggressive mode of securing survival (hunting, erritoriality, and competition). To perpetuate the race, ne family must fulfill the following functions:

1. Provide opportunity for heterosexual contact.
2. Protect the gravid female.
3. Provide security for the new mother and child.
4. Guarantee resources for the survival and health of ne family members and mechanisms for maintaining yalties and obligations sufficient to ensure these esources.
5. Inculcate instrumental skills.
6. Inculcate social skills and cultural values.
7. Provide guidelines for appropriate or adaptive beavior at each stage of development and for each sex.
8. Provide models and guidelines for successful arenting of the young.
9. Encourage and permit the seeking of mates outside he immediate family, thereby limiting the opportunities or incest.
10. Provide some provision for the infirm, the disbled, the aged, and the dying.

In brief, the family as an instrument of racial continuity nust fulfill the dual aims of human security and ndividual development.

llness and the Family

With regard to the care of the infirm, the disabled, the aged, and the dying, it has been pointed out that the family is the best social security system that has ever been invented. Yet, in a mobile, industrial and rapidly changing society such as ours, the traditional family is rarely sufficient. While some communities like the Amish and the Mennonites have in a sense turned inward and spurned the rest of society to take care of their own, the mainstream of Western society has seen fit to enact a variety of laws, regulations, and allocations, and to create institutions for the care of the sick. As science and technology are extensions of the human brain and hand, so are human services an extension of the family.

The challenges and burdens of chronic illness may be understood in terms of its effect on the family's capacity to fulfill all of its functions. A successful adaption to chronic disease in the family depends on the balance between the ailing member's need for care and the family's need for growth. One can find evidence for two seemingly contradictory responses to chronic illness in the family: a) The family responds to the illness as it would to any event, in its own characteristic way, and, b) chronic illness imposes unique and distinctive distortions that shape the family system, resulting in the observation that families with chronically ill members come to resemble each other in time. Given the complexities of human life and family systems, it is perfectly possible for both statements to be true. Indeed, two outcomes can be noted to result from chronic illness: a) The favorable outcome: The family system is strengthened, members come to enjoy greater intimacy and improved communication, tensions and hostilities are attenuated, and the various family members thrive and prosper. The sick member, through his suffering, and the effort and love elicited from others, can be seen to redeem the family. Families can at times look upon the illness of a member as a blessing—a blessing that may indeed disappear when the ill one dies or recovers. b)The unfavorable outcome: The family system is weakened, bonds of loyalties are strained, resources are disproportionately diverted to the sick one, other members are deprived of the goods they are entitled to, and growth and development are impeded or distorted. In such families, illness is a curse that is lifted only by the recovery, death or departure of the sick member or through the agency of a therapeutic intervention.

The Principles of Intervention with Families with Chronic Disease.

A. Assessment

In contemplating therapeutic intervention, it is important first to attempt some form of assessment. While it can be assumed that all illness is stressful, it cannot be assumed that the net affect on the family is always negative. To make that judgment, one needs to use a combination of subjective and objective criteria.

Among the *subjective* criteria are: 1) One's own feelings about the functions of the family and the care the sick member is receiving, and 2) the family member's own expressed and implied feelings about the situation. In that regard, one might simply inquire "How is it going?" and "What would you like to change?"

Among *objective* criteria are: 1) an inventory of basic family functions and the degree to which these are being fulfilled, 2) evidence of suffering, malfunctioning, and maladaptive behavior in various family members, 3) developmental arrests or regressions affecting family members, especially the young, 4) the cost in financial and psychological terms borne by the family in caring for the sick member. In other words, what is it taking away from them.

B. Therapy

Depending on their theoretical bias, different therapists attempt to address different issues through appropriate techniques. (Frequently the differences are more apparent than real.) Thus, Haley[2] focuses on issues of structural hierarchy: Are the parents functioning as parents and the children as children, and is the family afflicted with role reversals and role confusion? Bowen,[3] on the other hand, emphasizes the process of differentiation as the primary index of health in the family system; unhealthy family systems tend to discourage differentiation and to foster fusion and entrapment in the "undifferentiated family ego mass." One way that family systems deal with tension is through the method of triangulation whereby two conflicted members bring in a third one to help resolve the conflict or divert it. In this fashion, the process may resemble Haley's loss of hierarchical structure. Bowen favors relief of anxiety in order to establish a rational mode of communication and problem resolution. To that end, he strongly prefers dealing with the parents as the "architects of the family" system.

Minuchin[4] focuses attention on the structure of the family and the related issue of boundaries. He believes that families may have to be "destablized" by powerful and dramatic intervention before they can rearrange and reconstitute themselves in a more healthy way. Boszormenyi-Nagy[5] places his emphasis on matters of loyalties and obligations within the family system. His inquiry addresses questions of whether people are doing what is expected of them and are receiving appropriate acknowledgment for so doing. His approach, more than any other, is explicitly moral and ethical in its slant. Lewis[6] classifies families into those that are optimal, whose mode of operation is flexible, those that are adequate, whose mode of operation is rigid, and those that are dysfunctional, whose mode of operation is chaotic. He acknowledges that dramatic intervention may be desirable to take a dysfunctional chaotic family to a higher level where it is barely adequate, though still rigid. More flexible and less authoritarian approaches are needed to help the family achieve optimal levels of growth and flexibility.

Whatever their theory and mode of operation, family therapists generally; 1) believe in the strength of the family and the pervasiveness of its influence, 2) prefer to examine interaction rather than feelings, 3) think terms of systems rather than individual dynamics, 4) a intensely involved in the process rather than standi apart from it and commenting on it, and 5) try to achie alliances with all members of the family avoiding permanent alliance with any. Many point out that tl ideal position for the therapist in relationship to tl family is at the family's border—sufficiently in to i fluence the system, but sufficiently out not to l "sucked up" into it.

The practitioner of family therapy keeps the family mind at all times, whether dealing with the fami together, with parts of it, or with one individual. Haley has written, "The therapist should not interview person alone to help him understand his fantasies, b he can interview him alone to change the way he dealing with an intimate."[7]

In the assessment and therapy of families with chron illness, it is important to remember that the assessme may itself be therapeutic.

Issues and affects in Families with Chronic Disease

Among the specific issues and affects that one mu consider, whether one is dealing with one family mem ber or with all, are the following:

1. *Roles:* Are people allowed or allowing themselv to be who they are? Are there reversals and confusion Is the sick one being infantilized? Are care-take abrogating their authority? Are dependents bein parentified?

2. *Status:* Illness inevitably imposes some loss status for the leader, the caretaker, and the brea earner. But it can also elevate the sufferer to a speci level of respect and consideration. As McFie Campbe has written, "The family is an oligarchy ruled by i sickest member."[8] It is important to consider wheth the status changes for the various family members, an especially the sick one, are salutary or destructive.

3. *Relationships:* What happens to privacy, to ir timacy, to sexuality, and to autonomy when someone sick in the family? In what way is the parent/child bon altered?

4. *Negative affects:*

a) Anxiety: Is there an excessive amount of fear? Ar expectations unrealistic in one direction or the other? I this regard, education and especially the provision c written material may be the greatest importance. Th prescription of some form of activity can serve as a antidote to anxiety and ambiguity. Frightened peopl need to *do* something.

b) Grief: This may be a central, though unexpresse issue, in families afflicted with chronic disease. Indee all illness entails many losses. The question is wheth these are acknowledged or denied. Have they bee discussed with the family and among its members? Ha grief reached the level of despair? Is there a possibl contemplation of suicide? A subtle though probabl common problem is that of the successful resolution o grief before the sick member has died. How can famil embers relate to each other and to the sick member hen the latter is perceived as having already "left"?

c) *Anger:* This must indeed be the hardest affect to eal with; yet it is ubiquitous. It is the inevitable onsequence of frustration. Most helpful in dealing with nger are the recognition of its existence and its legit- macy and the modeling of ways of dealing con- tructively with it.

d) *Shame and Embarassment* may result from a sense f failure in fulfilling one's role and from disfigurement, odily odors, changes in appearance, and losses of bow- l and bladder control.

e) *Guilt:* The sources of guilt are myriad. Among the nost common are: 1) guilt over the illness itself, with the agging question of "Did I cause it?" Or, "Did I give it to im?" 2) Guilt over not doing enough for the family nember. 3) Guilt over having a good time, especially way from the family member. 4) Guilt over angry and lisappointed feelings. 5) Guilt over death wishes to- vards the sick member.

5. *Developmental considerations:* Here the issues are nultiple and concern all aspects of the lives of the ndividual members of the family. A central con- ideration is the freedom to develop and grow. In the bsence of such freedom, people become subject to lespair. The temptation becomes strong to escape the amily, to become sick, depressed, and to entertain livorce or suicide.

6. *Financial and practical considerations:* The costs nd mechanics of care may be the most significant for ertain families. Certainly for the poor, finances are of aramount importance. It should be borne in mind, owever, that poverty is most likely to be destructive vhen it is combined with loss of social cohesiveness and he development of conflict within the family.

7. *Theoretical and Practical Reflections*

In the light of extensive discussion among members of various disciplines at a conference of hospital social work directors in the state of Arizona in April of 1983, and the detailed viewing of videotypes of four multiple sclerosis families, the following conclusions and observations emerged as points of concensus:

1. The central issue in the study and care of families with chronic disease is one of balance: Balance between the needs of the individual for care and the need for the family to grow and balance between the needs for security and needs for development.

2. Most workers find that excessive involvement and attempting to do too much are more common sources of difficulty than insufficient involvement and inattention to the sick member. A show of hands in the group revealed that insufficient attention to the sick member was rarely an issue, whereas trying to do too much was far more common.

3. In all kinds of successful intervention, two themes kept recurring—hope and activity. These are the opposite of despair and passivity. They apply not only to the afflicted family but to the helper as well. It is not possible to be of much help to families and patients from a position of exhaustion and despair. Several M.S. family members viewed on the videotape spoke of their physician's despair and the manner and degree to which this communicated itself to them. Those who work with such families must recognize their own limits. Closely related is the need to maintain reasonable expectations short of cure. Many family members indicated that to be given hope of improvement and prescription for some form of relief are sufficient. They did not expect miracles from their physicians.

4. Self-help groups are often useful for both afflicted individuals and their families and have much to offer in terms of emotional support, specific guidance, and motivation for self-care. They enjoy the dual advantage of being extremely cost-effective and bearing no psychiatric label.

Groups are liable to two kinds of hazards by 1) being excessively hopeful and positive to a degree that excludes the expression of negative feelings and thoughts, and 2) being too grim and pessimistic and thus diminishing hope and activity. At least one of the four families viewed on tape spoke of the latter situation.

5. Occasionally, a dual therapeutic approach is indicated whereby one therapist addresses the needs of the sick individual and another the needs of the family. For this to succeed, communication and harmony between the two therapists are essential.

6. Authority, particularly that of the physician, should on occasion be invoked to help families. This may take the form of 1) *prediction* of anxiety, sadness, anger, and turmoil, and 2) *prescription* of leisure, pleasure, and privacy. Frequently, family members will not acknowledge or attend to their own needs unless they are "ordered" to do so by the doctor.

The tasks facing the family with a chronically ill member are fundamentally the same as those of any family, namely to foster each member's safety and development and to live as effectively, productively, and happily as possible. For those who undertake the task of helping such families, it may be wise to remember Osler's dictum, "It is given to us sometimes to cure, often to relieve, and always to console."

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Urology

Impotence: An Overview and a Solo Practitioner's Experience in it's Surgical Correction

Joseph E. West, III, M.D.

Abstract

It is possible to define the impotent male and to determine the etiology of his impotence. Psychologically impotent patients are best treated with psychotherapy. Physically impotent patients may be candidates for surgical correction of their problem. The state-of-the-art in penile prosthetic surgery offers the impotent male a real alternative to his life of impotency.

Key Words: Impotence, Penile Prosthesis.

Despite society's growing acceptance of the importance of sexuality, feelings of shame and embarrassment still weigh heavily enough to keep sexual dysfunction the best guarded secret that your patients may have. Yet, in many cases, such dysfunction can be overcome. It is frequently an individual's unwillingness to discuss the problem that needlessly inhibits his sexual life.

I have had the opportunity to surgically treat 23 patients who have suffered from erectile impotence. The purpose of this paper is to give an overview of impotence and to report on the clinical experience of the above mentioned patients.

Table 1
Other Common Organic Causes of Impotence

- Prostatitis
- Kidney Disease
- Surgery on the Aorta and Iliac Vessels
- Spinal Cord Injury
- Pelvic Fracture
- Pelvic Irradiation
- Prostatectomy
- Penile Injury
- Multiple Sclerosis
- Leriche Syndrome
- Peyronie's Syndrome
- Priapism
- Brain Injuries

Definition of Impotence

Impotence is defined as the inability to have c maintain an erection adequate for intercourse. Mo men at some time in their life experience impotenc but it is usually an isolated event secondary to anxiet preoccupation, stress, anger, or an overindulgence i alcohol or drugs. "Primary impotence," *never* havin been able to have an erection, is rare. "Secondar impotence," a *chronic* failure to complete intercours to the satisfaction of both partners, is more common. It estimated that ten million males in the United State suffer from chronic impotence of either a psychogeni or organic etiology.

Historical Perspective

The problem of impotence has been recorded i ancient Chinese, Egypitian, and Greek writings. Both th Old Testament and Hippocrates commented on th problem of impotence.[1] The first attempts at creating prothesis dates to 1936, when N. A. Bogoras surgicall reconstructed an erect penis using a section of ri cartilage to provide rigidity. The prosthesis prove unworkable since the rib cartilage was reabsorbed b the body within several years.[2] Acrylic prosthes became available in 1950. For the most part, none c these added any substantial bulk to the penis and merel prevented it from buckling during intercourse. In 197 two types of silicone prosthesis were introduced. Th "semirigid rod" type prosthesis consisted of a solid ro of silicone rubber. This was introduced by Smal Carrion, and Gordon and has persisted to this da basically unchanged from its original design.[3] Th original inflatable penile prosthesis introduced by Scot Bradley, and Timm in 1973 has undergone a process c evolution to minimize potential postoperative di ficulties which could develop over the years.[4] Since 197 several other "semirigid rod" type prosthesis have bee introduced in an effort to "bridge the gap" between th rigid Small-Carrion device and the mechanical in flatable Scott prosthesis.[5,6] Between 1973 and 198 55,000 men have been implanted with either a semirigi rod or the inflatable penile prosthesis.[7]

The Impact of Impotence

Impotence affects more than a man's sexu

From: 10250 North 92nd Street, Suite 204, Scottsdale, Arizona 85258. Reprint request to Joseph E. West, III, M.D, 10250 North 92nd Street, No. 204, Scottsdale, Arizona 85258.

Table 2
Age of Patient at the Time of Implant

0-29	1
0-39	3
0-49	4
)-59	3
)-69	13
)-79	4

erformance, in some it strips from their ego that one ning that they consider their "maleness." This can lead) loss of self-esteem—it can even affect their work, their elationships, and their day to day living. Restoring their otency by whatever method can recreate the man's elf-image. The man often regains self-confidence and inctions socially and professionally at a renewed level.

There is no uninvloved partner when impotence ffects a relationship. The woman may have feelings of adequacy or rejection, ultimately responding with nger and hostility. In effect, impotence in the male artner may result in termination of their relationship.

auses of Impotence

As recently as 1979, statistics reported that as many as)% of all cases of impotence were psychogenic in rigin. With advances in medical science, we now have nproved diagnostic methods which have altered this neory. Today it is acknowledged that roughly 50% of ale impotence can be traced to physical causes.[8] The nost common physical causes of impotence are:

Diabetes: An estimated 50% of diabetic men may evelop permanent physical impotence as a conequence of their disease. Temporary impotence can esult from poorly controlled diabetes.

Hypertension: Persistant high blood pressure can ccelerate atherosclerosis and directly induce physical npotence.

Alcoholism: A common contribution to physical npotence, alcohol is also the second most common ctor in producing psychological impotence. About alf of chronic alcoholics who are impotent remain so ter they discontinue drinking.

Atherosclerosis: Atherosclerosis not only involves rge and medium sized arteries, but it also involves the naller penile arteries resulting in impotence.

Medications: Impotence can be a side effect of meditio for high blood pressure; treatment of ulcers; epression; or cancer.

Hormonal Imbalance: Hormones that can affect ectile ability include testosterone, prolactin, and yroid hormone.

Radical Pelvic Surgery: Radical cystectomy, radical ostatectomy, radical resection for colon cancer can sult in impotence because of nerve damage.

Other common causes of impotence are listed in ble 1.

ıe Diagnosis of Impotence

As with any disease process, a thorough history and nysical examination is accomplished as part of the initial evaluation of all patients who present with impotence. Laboratory data including CBC, UA, renal profile, and hormonal assays are obtained. A test using the doppler ultrasound flow meter can assess blood flow through the arteries of the penis and determine whether arterial blockage exists. A penile artery-brachial artery index can then be calculated and compared with normal values giving us a computed measure of impaired penile blood flow. A neurological examination can determine whether there is nerve damage causing impotence.

Table 3
Etiology of Impotence

Diabetes Mellitus	3
Artherosclerosis	13
Radical Prostatectomy	2
Peyronies	2
Pelvic Fracture	1
Unknown	7

In 1970, Dr. Ismet Karaacan, a researcher at Baylor College of Medicine, suggested that the study of sleep erections could be an objective method of determining whether impotence is physical or psychological in origin.[9] Normally a male has three to five erections every night during the REM stage of sleep. Based on this research, it was found that psychologically impotent males continue to have regular erections during sleep while physically impotent males fail to have normal "sleep erections." This type of testing is referred to as Nocturnal Penile Tumescence (NPT) testing and can be performed in a formal sleep lab, where additional EEG monitering can be done, or in the privacy of the patient's own bedroom. Necessarily, at home, no EEG monitoring is performed. However, at present, there have been sufficient reports in the literature to suggest that home monitoring is diagnostic in a very high percent of cases.[10]

Additional data may be collected from the results of the Minnesota Multiphasic Personality Inventory (MMPI). Other psychological sexual testing has been introduced and these in combination with the MMPI not only help define the psychologically impotent male but also help to define the physically impotent male who may not be able to cope postoperatively with a prothesis.

The Treatment of Impotence

If the origin of the patient's impotence is psychological, many of those afflicted can be assisted through sex therapy or counseling. Chronically psychologically impotent males who are considered failures after serious counseling efforts, may be considered candidates for surgical correction. Hormones are sometimes administered to patients who appear to have a deficiency. An iatrogenic etiology, such as impotence from administration of antihypertensives, can be resolved by withdrawing the drug or substituting a new drug that does not impede the patient's potency. Surgical revascularization for vascular insufficiency has also been considered, but to date the procedure has

Table 4
Types of Prosthesis

Inflatable	22
Jonas/AMS - (Malleable)	4
Small-Carrion	2

been unsuccessful in its long-term follow up.[11] If these alternatives fail, implantation of a penile prosthesis may be a suitable alternative. Each type of penile prosthesis has different advantages and disadvantages. The major difference between the semirigid rods and the inflatable penile prosthesis is that the semirigid rods make the penis *permanently* erect, but the inflatable prosthesis does not.

A Solo Practice Experience

Since October 1981, twenty-eight impotent patients have been operated on by the author. Twenty-one of these patients underwent primary operation. Seven of these patients presented with mechanical problems of their inflatable penile prosthesis that had been originally implanted elsewhere. The ages, etiologies, and types of prosthesis used in all 28 patients are summarized in Tables 2 and 4.

The preoperative, intraoperative, and postoperative antibiotic regimen, in addition to the strict sterile patient and surgeon preparations are similar to those reported by Scott et al.[12] A penoscrotal incision was used in all cases. Postoperative care involved two to three days hospitalization and oral antibiotics for seven days. All patients, regardless of type of prosthesis, were allowed to use the device for sexual intercourse three weeks postoperatively. Patients receiving the inflatable penile prosthesis were instructed to activate and deactivate the prosthesis at least twice daily beginning one week postoperatively.

Of the seven patients who were originally implanted elsewhere, all had the inflatable penile prosthesis. Five of these seven required reoperation because of mechanical failure. All of these mechanical failures were a result of cylinder leaks and all devices were originally implanted prior to the use of "rear tip extenders." Two of these seven patients were operated on for cosmetic reasons. Both of these patients had fully operational devices preoperatively and continue to have functioning devices. Both of these cosmetic revisions involved asymmetric expansion of the cylinders.

Of the twenty-one patients who underwent primary implantation by the author, fifteen patients had the inflatable type prosthesis implanted. Of the remaining patients, two have Small-Carrion devices, one has a "Jonas" prosthesis and three patients have the AMS malleable type prosthesis. The Small-Carrion patients are doing well. The one "Jonas" patient has a functioning device but is not totally satisfied with the cosmetic result. Three patients with AMS malleable prosthesis are doing well. At present the surgical success for the semirigid rod patients is 100%. Of the fifteen inflatable prosthesis patients, one has required revision for cosmetic reasons (asymmetric expansion) and o has required removal because of infection. At the ti of removal of the infected device, it was functioni satisfactorly and mechanically intact. It should mentioned that the risk of infection requiring remo of a device is similar regardless of the device chosen a usually runs about one percent to two percent. In t series there have been no mechanical or nonmechani problems relating to the device itself in patients ope ated on by the author. Overall the surgical success of t patients originally implanted with the inflatable peni prosthesis by the author is 87%. Considering that t other seven patients who were originally implant elsewhere currently have functioning devices implant by the author, the overall surgical success of t inflatable penile prosthesis is 90% (20 out of 22). T percentage of successful inflatable penile prosthe patients compares favorably to the large centers i planting the inflatable device.[13,14] Scattered reports the literature show success rates with the inflatab penile prosthesis to be in the range of 65% to 70%. Mo of these reports are by authors with limited inflatab penile prosthesis implant experience.

Summary

In 1983 the state-of-the-art provides the physicia with the ability to diagnose and successfully treat th impotent male regardless of the etiology of the patient impotence. If surgery is indicated, penile prosthes surgery, today, is both mechanically and technical successful.

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Special Article

bservations on reventable Mortality n Maricopa County 980-1981

oug Campos-Outcalt, M.D.
obert G. Harmon, M.D.

bstract

Maricopa County mortality data for 1980 and 1981 ere obtained and analyzed to assess high-risk groups, onditions, and possible preventive interventions. hile the four leading causes of death were heart isease, cancer, cerebral vascular disease, and accidents, ere were marked differences based on sex and race. inorities experienced higher mortality rates for most e catagories, especially for accidents, homicide, and erinatal causes. Accidents and violence were major auses of mortality in all races above the age of four ears. The data suggest the need for renewed emphasis n prevention programs in prenatal care, injury prevention, alcohol abuse and smoking cessation.

ntroduction

If health professionals are to develop disease prevention strategies which are effective and appropriate for target populations, the major causes of morbidity and mortality must be explored. Maricopa County is a rapidly growing area with a population of over 1.5 million people, of whom 81% are Caucasian, 15% are Hispanic, 3% are Black and 1% American Indian. The population is served by a variety of health care providers including the Maricopa County Department of Health Services.

As part of an evaluation of the preventive services offered by the county network of primary care centers, we reviewed Maricopa County mortality data for the years 1980 and 1981. The data on causes of death were obtained from the Bureau of Systems and Statistics of the Maricopa County Division of Public Health and the Research and Statistical Analysis Section of the Arizona Department of Health Services. Census data for 1980 and 1981 were obtained from Arizona Department of Economic Security. All statistical calculations were performed by the authors.

Leading Causes of Death

Tables 1 and 2 list the leading causes of death by race and sex for the year 1980. The four leading causes of death for all races combined were heart disease, cancer, cerebral vascular disease and accidents. Males had higher mortality rates for accidents and suicides while females had a higher rate for cerebral vascular disease.

Accidents took a greater toll among American Indians and males. The rate of death by homicide was higher in all minority groups compared to Caucasians, especially among Blacks and American Indians. Death in the perinatal period was the fifth leading cause of mortality among Blacks, fourth among Hispanics and sixth among American Indians.

The bleakest statistics were those of American Indians, whose leading cause of death was accidents. Cancer and cerebral vascular disease did not rank in the top seven causes of death for this population due to the high death rates related to violence, liver disease, diabetes, and perinatal causes.

Table 1
Mortality Rates (Deaths Per 100,000 Population) for the Leading Causes of Death, by Race and for all Races by Sex
Maricopa County—1980

Races		Caucasian		Black		Hispanic		American Indian		All Races Male		All Races Female	
Causes	779.9	All Causes	801.9	All Causes	748.2	All Causes	383.9	All Causes	554.5	All Causes	904.3	All Causes	662.6
art Dis.	268.5	Heart Dis.	285.2	Heart Dis.	232.8	Heart Dis.	91.0	Accidents	113.5	Heart Dis.	312.9	Heart Dis.	225.8
ncer	169.4	Cancer	181.3	Cancer	110.2	Cancer	61.8	Heart Dis.	78.6	Cancer	191.0	Cancer	148.7
D*	54.8	CVD	58.9	Accidents	49.9	Accidents	52.8	Liver Dis.	65.5	Accidents	69.7	CVD	62.1
cidents	50.0	Accidents	45.6	Homicide	47.8	Perinatal Causes	22.1	Homicide	34.9	COPD	53.3	Accidents	30.8
PD	38.7	COPD	43.1	Perinatal Causes	37.4	CVD	17.1	Diabetes	34.9	CVD	47.2	COPD	24.7
eumonia	19.5	Pneumonia	20.2	CVD	37.4	Homicide	17.1	Perinatal Causes	26.2	Suicide	26.1	Pneumonia	18.6

VD - Cerebral Vascular Disease

One should be aware of the various pitfalls of interpreting mortality data based on mortality rates and percentages of all deaths because the age distribution of

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rom: Division of Public Health, Maricopa County Department of ealth Services. 1825 East Roosevelt, Phoenix, Arizona 85006.

Table 2
Leading Causes of Death, As a Percentage of all Deaths, by Race and for all Races by Sex
Maricopa County—1980

All Races		Caucasian		Black		Hispanic		American Indian		All Races Male		All Races Female	
Heart Dis.	34.4	Heart Dis.	35.6	Heart Dis.	31.1	Heart Dis.	23.7	Accidents	20.5	Heart Dis.	34.6	Heart Dis.	34.1
Cancer	21.7	Cancer	22.6	Cancer	14.7	Cancer	16.1	Heart Dis.	14.2	Cancer	21.1	Cancer	22.4
CVD*	7.0	CVD	7.3	Accidents	6.7	Accidents	13.7	Liver Dis.	11.8	Accidents	7.7	CVD	9.4
Accidents	6.4	Accidents	5.7	Homicide	6.4	Perinatal Causes	5.8	Homicide	6.3	COPD	5.9	Accidents	4.6
COPD	5.0	COPD	5.4	Perinatal Causes	5.0	CVD	4.5	Diabetes	6.3	CVD	5.2	COPD	3.7
Pneumonia	2.5	Pneumonia	2.5	CVD	5.0	Homicide	4.5	Perinatal Causes	4.7	Suicide	2.9	Pneumonia	2.8

*CVD—Cerebral Vascular Disease

the population can skew the data. For example, a death rate of 383.9 per 100,000 among Hispanics compared to 801.9 for Caucasians does not necessarily reflect a better health status for Hispanics. It is more indicative of a Hispanic population which is, on the average, younger than the Caucasian population. For example, 21.1% of Caucasians are younger than 15 years compared to 30.5% of Blacks and 35.2% of Hispanics. The high ranking of perinatal causes of death among Blacks and Hispanics is due to the higher birth rate (18.6 per 100,000 for Caucasians, 28.5 for Blacks and 32.1 for Hispanics in Maricopa County in 1980) and a higher infant mortality rate.

Age Specific Death Rates

Table 3 lists mortality rates by race and age for 1981. Data on American Indians were not analyzed due to small numbers. Particularly striking are the differences between Caucasians and minorities in the younger age groups. The death rate for Blacks under four years of age was over three times higher than for Caucasians.

The Maricopa County infant mortality rate (number of deaths among children up to age 12 months per 1000 live births) for 1981 was 11.1 for Caucasians, 28.4 for Blacks and 12.0 for all groups.[1] The national infant mortality rate for the same year was 11.7.[2] One of the major determinants of infant mortality is low weight births, defined as less than 5½ pounds. In 1981, 5.7% of Caucasian births in Maricopa County were low birth weight compared to 12.6% for Blacks.

Table 4 lists mortality rates by disease and age for Caucasians in Maricopa County during 1981. Table 5 lists the same for Blacks and Hispanics combined. In the age group 0-4 years, the causes of death were the same, although minorities had higher mortality rates for each cause. Between the ages of five and 44 years, accidents were the number one cause of death for all age groups. In this same age range, minorities suffered a much higher rate of homicide and Caucasians had a higher cancer mortality rate. Between the ages of 15 years and 24 years, minorities had a higher rate of suicide. Over the age of 45 years, the mortality rates for heart disease and cancer were similar among different races.

Table 3
Mortality Rates (Deaths per 100,000 Population) by Age and Race
Maricopa County—1981

Age	Caucasian	Black	Hispanic
0-4 yr.	267.5	930.5	337.9
5-14 yr.	29.6	79.9	32.6
15-19 yr.	90.1	*	129.7
20-24 yr.	106.0	216.3	192.5
25-29 yr.	96.2	214.0	150.5
30-44 yr.	153.8	313.8	230.2
45-64 yr.	805.4	1505.5	728.0
65→	4313.6	5458.0	4650.9

*No deaths in Blacks age 15-19 years in 1981 in Maricopa County, The were only 5792 people in that age, race group.

Accidents and Violence

The effect of motor vehicle accidents, other acciden and violence on mortality statistics in Maricopa Coun can be appreciated from Table 6. These causes a counted for over 50% of all deaths between the ages one and 30 years. Four out of five deaths in the age rang 15 to 24 years were in these categories. Death rates in th United States have been declining since 1950 in eve age category except for males ages 15 to 24 years, th exact ages in which accidents and violence take the greatest toll.

Death due to violence and accidents as a percentag of all deaths decreased with age but the numbers ar death rates due to these causes remained high into o age. In fact, the group with the highest mortality rate f accidents and violence is the age range of 65 years ar older. This is due to high mortality rates for no mot vehicle accidents and suicide.

Also of interest is the motor vehicle/other accide ratio. Below the age of five years, many more childre were killed by other accidents than by motor vehic accidents. In 1980, Maricopa County had a death rate 26.2 per 100,000 for ages one to four years due to no motor vehicle accidents compared to a national rate 17.1 in 1979.[3] Starting at age five and continuing throug age 64, motor vehicle deaths were more prevalent.

Table 4
Mortality Rates (Deaths Per 100,000 Population) for the Leading Causes of Death, by Age, for Caucasians
Maricopa County—1981

'ears		5—14 Years		15—19 Years		20—24 Years	
ıatal Causes	96.5	Accidents	16.6	Accidents	60.9	Accidents	58.1
Defects	69.1	Cancer	4.7	Cancer	8.6	Suicide	22.8
efined	31.8	Birth Defects	1.6	Suicide	6.0	Homicide	10.2
dents	30.7	Suicide	1.0	Homicide	3.4	COPD·	2.4
29 Years		**30—44 Years**		**45—64 Years**		**≥ 65 Years**	
dents	43.8	Accidents	31.8	Cancer	269.1	Heart Disease	1792.8
de	18.9	Cancer	30.2	Heart Disease	266.8	Cancer	933.9
er	7.7	Heart Disease	24.1	COPD	46.5	CVD*	376.0
icide	7.7	Suicide	21.0	Accidents	36.8	COPD	236.4

)—Cerebral Vascular Disease

Table 5
Mortality Rates (Deaths per 100,000 Population) for the Leading Causes of Death, by Age, for Blacks and Hispanics
Maricopa County—1981

Years		5—14 Years		15—19 Years		20—24 Years	
atal Causes	187.6	Accidents	19.6	Accidents	67.3	Accidents	75.3
Defects	81.3	Homicide	5.4	Suicide	13.5	Homicide	53.8
fined	75.0	Birth Defects	5.4	Homicide	13.5	Suicide	39.5
lents	28.1	COPD	3.6	Heart Disease	3.4	Heart Disease	7.2
9 Years		**30—44 Years**		**45—64 Years**		**≥ 65 Years**	
lents	62.7	Accidents	52.0	Heart Disease	294.1	Heart Disease	2021.2
cide	29.2	Homicide	45.2	Cancer	208.7	Cancer	893.1
le	20.9	Heart Disease	36.2	Accidents	82.1	CVD*	385.4
Disease	8.4	Cancer	29.4	CVD	51.3	Pneumonia/ Influenza	319.6

)—Cerebral Vascular Disease

Table 6
Number of Deaths, % of all Deaths and Mortality Rates (Deaths per 100,000 Population)
Due to Accidents and Violence
Maricopa County—1980

se of th	1 day — 1 yr.			1 yr. — 4 yrs.			5 yrs. — 14 yrs.			15 yrs. — 19 yrs.			20 yrs. — 24 yrs.		
	#	%	Rate	#	%	Rate	#	%	Rate	#	%	Rate	#	%	Rate
or Vehicle dents	1	.4	3.9	12	16.9	13.7	29	42.6	12.6	56	39.2	40.8	76	35.5	51.6
er dents	7	2.8	27.5	23	32.4	26.2	12	17.6	5.2	23	16.1	16.7	28	13.1	19.0
ide	0			0			3	4.4	1.3	19	13.3	13.8	36	16.8	24.4
nicide	2	0.8	7.9	3	4.2	3.4	3	4.4	1.3	17	11.9	12.4	27	12.6	18.3
l	10	4.0	39.3	38	53.5	43.3	47	69.1	20.4	115	80.4	83.7	167	78.0	113.3

se of th	25 yrs. — 29 yrs.			30 yrs. — 44 yrs.			45 yrs. — 64 yrs.			≥ 65 Years		
	#	%	Rate	#	%	Rate	#	%	Rate	#	%	Rate
or Vehicle dents	59	32.2	44.3	83	15.5	28.6	56	2.2	19.8	64	0.8	36.6
er dents	16	8.7	12.0	29	5.4	10.0	50	1.9	17.7	128	1.7	73.3
ide	27	14.8	20.3	61	11.4	21.0	62	2.4	22.0	50	0.7	28.6
nicide	24	13.1	18.0	42	7.9	14.5	28	1.1	9.9	10	0.1	5.72
l	126	68.9	94.6	215	40.3	74.1	196	7.6	69.5	252	3.3	144.2

Total number of deaths, % = % of all deaths in that age group, Rate = # of deaths per 100,000 population.

Commentary

Mortality data for Maricopa County for 1980-1981 were fairly comparable to national data. The data reflect cancer and heart disease as the major causes of death and emphasize the problem of violence and accidents in all age groups. Minorities have higher death rates at all ages, a markedly higher infant mortality rate and a greater number of deaths due to homicide. This is probably due to socioeconomic disadvantage.[4]

The lessons for those interested in prevention are many. Early and comprehensive prenatal care should be a priority, especially for minority and teenage mothers. Strategies to decrease home accidents and drownings should be considered. Decreasing the toll of motor vehicle accidents on all age groups would be one of the most effective interventions if it could be accomplished. Individual counseling and educational programs to promote the use of infant car seats and seat belts should be tried. Arizona's new driving while intoxicated[5] and infant care seat[6] laws may make a difference, although even more stringent measures may be necessary to have a significant impact.

Cancer screening, as a secondary preventive measure, should be increased and primary cancer prevention measures such as smoking cessation should be stressed. Hypertension control and smoking cessation would aid both heart and cerebral vascular disease risks.

Many of the deaths due to accidents and violence are probably also due to alcohol abuse and socioeconomic factors. These seem difficult to influence without a significant change in societal attitudes toward drinking and more effective social policies to equalize opportunity for adequate employment, education, housing, health care and other factors which ultimately affect morbidity and mortality.

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Editorial

Vitamin A Research

The Arizona Health Sciences Center has become home, in the past three ears, for the study of vitamin A and ancer. Under the general guidance of rank L. Meyskens, Jr., Associate Professor of Medicine, work in this area began in 1978 through a multidisciplinary Vitamin A program project grant. These investigations nvolved numerous workers from the basic and clinical sciences and has built on leads generated in the laboratory nd clinic. The Chemoprevention and Vitamin A Program Project (as it is now alled) has, as its major emphasis, been determining the role of vitamin A and ts natural and synthetic derivatives in he prevention and treatment of human ancer. Activity for vitamin A derivatives has been found in certain dvanced cancers, including selected quamous cell malignancies.[1] Recently, Health Sciences Center investigators have shown that 13-cis-retinoic acid, a itamin A derivative, has substantial ctivity and anticancer effect against mycosis fungoides, a T-cell lymphoma.[2] The emphasis in the next few years will be to determine the role of retinoids lone or in combination against dvanced cancers, as well as to determine their role as agents.

One of the major projects of the Chemoprevention and Vitamin A Program Project is to study the effects of vitamin A in patients with multiple kin cancers. An important separate tudy is directed at determining whether 13-cis-retinoic acid can prevent the development of skin ancers in patients with actinic eratoses. This large clinical trial will nvolve over 2,400 patients and bring ocus to the developing Cancer Control Program at the University. In the beautiful sunshine of Arizona these and other similar environmentally driven tudies continue to evolve and provide direction for many of the investigations t the University of Arizona.

From these primary studies, several other important investigations in the rea of vitamin A have developed. Begun in 1981, the role of retinoic acid in the chemoprevention of cervical dysplasia is being determined. The initial studies have been completed and appear favorable.[3] Project investigators are now working with other institutions to complete a large randomized phase III study of vitamin A acid for the treatment of moderate and mild cervical dysplasia.

An important part of the vitamin A research effort has been in close cooperation with several pharmaceutical firms. These collaborative interactions provide additional support for the vitamin A programs and access to a wide variety of new compounds. Particularly important is the increasing local interest on research to find and test noncytotoxic Vitamin A-related compounds to be used for cancer prevention and treatment. The vigor of investigators representing many clinical areas looking expectantly for less toxic ways to deal with these aspects of cancer is impressive.

These programs have been well funded for the past several years, and amount to an annual $900,000 for research in the Arizona Health Sciences Center. The vitamin A research effort is an excellent model of successful, multidisciplinary research which has provided significant and important interactions between the basic and clinical scientist at the Arizona Health Sciences Center. In these economically difficult times, the program has been sustained, has grown, and has led to new directions for many investigators. This provides an important resource for the state in bringing the newest innovations in therapy. It sustains the curricular base and assures that the educational presentations are at the forefront for students at all levels.

Frank Meyskens, Jr. M.D.
Associate Professor of Medicine
Internal Medicine

Louis J. Kettel, M.D.
Dean, College of Medicine

References

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Briefly Noted

William C. Brainard, M.D., Phoenix, was the featured speaker for the October *Health Talk* forum. Cosponsored by ArMA and Blue Cross/Blue Shield of Arizona. His topic was "Time Out for Fun and Fitness."

Russell P. Chick, M.D., Phoenix, discussed Sports Medicine on the October *Health Highlights* program cosponsored by ArMA and SamCor's Video Services. The November guest was **Barry A. Hendin, M.D.**, Phoenix, talking about Altzheimer's Disease. *Health Highlights* is presented on American Cable (Channel 13), Storer Cable (Mesa/Ahwatukee Channel 2 and Phoenix/Glendale Channel 106), United Cable of Scottsdale (Channel 6) and Western Cablevision (Channel 7).

Michael Grossman, M.D., Phoenix, is one of 219 new Fellows recently elected to the American College of Physicians (ACP). Dr. Grossman will be formally inducted at the College's Annual Session in Atlanta in April 1984.

Andrew Nichols, M.D., Tucson, President of the Arizona Public Health Association and Chairman of the Public Health Committee of the Arizona-Mexico Commission was one of the presenters at the 55th Annual Meeting of the Arizona Public Health Association and Joint Conference of the Arizona and Sonora Public Health Association held in September in Nogales, Arizona. The theme of the program was "Promoting Health and Peace Along the Border—Science and Social Action."

Sidney E. Salmon, M.D., Director of the University of Arizona Cancer Center, Tucson, has been selected the President of the American Society of Clinical Oncology for 1984-1985. The Society with 4,500 members is the largest organization of clinical cancer specialties in the United States.

Theodore J. Tarby, Ph.D., a neonatal neurologist, has joined the St. Joseph's Hospital, Phoenix, medical staff in the perinatology and pediatrics programs.

Robert E. T. Stark, M.D., is the new President-Elect of the American Society of Bariatric Physicians. Dr. Stark spoke on the topic, "Use of 'Heavy Hands' in Obesity: Demonstration and Results of Use in Clinical Practice" at the Bariatric Society's annual meeting in Las Vegas in October.

Dr William C. Brainard—November "Health Talk"

Donald Tobias, M.D., Phoenix, has announced plans for an NMR (Nuclear Magnetic Resonance) Diagnostic Center to open later this year in a building immediately west of the Walter O. Boswell Memorial Hospital in Sun City. The NMR scanner will be the second in Arizona and one of about two dozen in the United States.

Wilber C. Voss, M.D., Tucson, chaired *Current Perspectives II: Diseases of Arizona, Including Cocci* at the Pima County Medical Society in November. Other ArMA members appearing on the program were **Drs. Lawrence E. Friedman, David L. Hardy**, and **James M. Dover**, all of Tucson.

Jeanne (Mrs. Dennis E.) Weiland, Scottsdale, has been awarded the National Association of Social Workers (NASW) Award for Excellence for 1983-1984. The award, presented by the Arizona State Chapter of NASW, carried a grant of $500.00. Jeanne has contributed the total amount of the award to the School of Social Work Library at Arizona State University.

Robert G. Wilson, M.D., Prescott, immediate Past President of the Utah State Medical Association, is a new member of ArMA. Dr. Wilson is currently practicing his specialty, Dermatology, two weeks out of the month in Prescott and the other two weeks in Salt Lake City. He will move to Prescott permanently in April 1984.

The Arizona Medical Association welcomes the following new members:

Active Members

Maricopa

Ruben Aquilera, M.D.
Internal Medicine
12611 North 103rd Avenue, Sun City
Baylor College of Medicine—1977

Evan G. Bauer, M.D.
Dermatology
555 West Catalina Drive, No. 311, Phoe
University of Toronto, Ontario,
Canada—1976

Berkley H. Benneson, M.D.
Cardiovascular Diseases
7555 East Osborn Road, Scottsdale
University of Arizona—1975

William C. Boake, M.D.
Internal Medicine
12600 North 113th Avenue, Youngtow
University of Melbourne—1948

Harold M. Braswell, M.D.
Family Practice
207 West Las Palmaritas, Phoenix
University of Arkansas—1955

Lazaro B. Cherem, M.D.
Internal Medicine
1010 East McDowell Road,
No. 203, Phoenix
Universidad Autonoma de
Guadalajara—1976

Thomas F. Disney, M.D.
Rheumatology
6145 East Gold Dust Avenue, Scottsda
Queen's University, Canada—1964

Mark T. Felmus, M.D.
Neurology
525 North 18th Street,
Suite 602, Phoenix
Baylor College of Medicine—1974

James W. Foltz, M.D., M
Obstetrics and Gynecology
10599 North Tatum, Paradise Valley
University of Arizona—1979

Robert L. Fortune, M.D.
Pediatrics
8630 North Avenida Del Sol,
Paradise Valley
University of Alberta, Canada—1971

Jay H. Jacobs, M.D.
Cardiovascular Diseases
334 West Tenth Place, Mesa
New Jersey Medical School—1978

Patrick H. Kennedy, M.D.
Obstetrics and Gynecology
4025 West Bell Road, Phoenix
Universidad Autonoma de
Guadalajara—1976
Karanjit S. Kooner, M.D.
Ophthalmology
10192 North Coggins Drive,
Sun City
Dayanand Medical College,
Tanzania—1974
Carl G. Lindquist, M.D.
Internal Medicine
13460 North 94th Drive, Peoria
University of Kansas—1969
William M. Marsh, M.D.
General Surgery
7300 East Fourth Street,
No. 261, Scottsdale
Baylor College of Medicine—1977
Deborah S. Mendelson, M.D.
Dermatopathology
9225 North Third Street,
Suite 307, Phoenix
Ohio State University—1973
Herminio P. Mendoza, M.D.
Anesthesiology
4600 East Ocotillo Road,
Paradise Valley
University of the East Ramon,
Manilla—1970
Hong-Kee Ong, M.D.
Orthopedic Surgery
13660 North 94th Drive,
No. B1, Peoria
University of Alberta,
Canada—1969
Aubrey Palestrant, M.D.
Radiology
111 East McDowell Road, Phoenix
University of Witwatesrand,
South Africa—1971
Frank Parker, M.D.
Anesthesiology
909 East Brill Street,
No. 311, Phoenix
University of Minnesota—1970
Francisco Peua, M.D.
Family Practice
2720 North 20th Street,
No. 450, Phoenix
University of California,
San Francisco—1974
Donald B. Polansky, M.D.
General Surgery
1300 North 12th Street,
No. 613, Phoenix
University of Iowa—1975
Theodore L. Rudberg, M.D.
Family Practice
5430 East Sapphire Lane,
Paradise Valley
University of Minnesota—1977
David P. Ruoff, M.D.
Orthopedic Surgery
4124 North 57th Street, Phoenix
Indiana University—1981
Charles B. Scott, M.D.
Neonatal-Perinatal Medicine
2601 East Roosevelt, Phoenix
Dartmouth Medical School—1974
University of Rochester—1976
Gautam M. Shah, M.D.
Pulmonary Disease
10448 West Coggins Drive, Sun City
B. J. Medical College, India—1972
Martin C. Sheehy, M.D.
Physical Medicine & Rehabilitation
525 North 18th Street,
Suite 604, Phoenix
University College Medical School,
Ireland—1968
Theodore J. Tarby, M.D.
Pediatric Nephrology
222 West Thomas Road,
No. 302, Phoenix
University of Colorado—1977
Hong M. Thai, M.D.
General Practice
2332 North 15th Avenue, Phoenix
Saigon Medical School—1972
Douglas A. Tuchin, M.D.
Anesthesiology
5115 North Central Avenue, Phoenix
Chicago Medical School—1980
Polly Turner, M.D.
Internal Medicine
2501 East Southern, No. 13, Tempe
University of New Mexico—1979

Yavapai

Robert G. Wilson, M.D.
Dermatology
1055 Ruth Street, Prescott
University of North Carolina—1959

Service Members

Jose F. Amato, M.D.
Psychiatry
4519 East Palo Verde Drive, Phoenix
Buenos Aires Medical School—1964
John Q. Baker, M.D.
General Surgery
Williams Air Force Base Hospital, WAFB
University of Washington—1966
Theodore W. Oakes, M.D.
Internal Medicine
1507 West Missouri, No. 3, Phoenix
University of New Mexico—1980

Associate Members

Michel Bogard, M.D.
Family Practice
17301 Del Webb Boulevard, Sun City
Colorado University—1935
L. Stanley Sell, M.D.
Orthopedic Surgery
7637 East Northland, Scottsdale
Case Western Reserve University—1936

Resident Members

Maricopa

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Anesthesiology
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General Surgery
Maricopa Medical Center
Edward D. Brown, M.D.
Pediatrics
Good Samaritan Medical Center
Eladio S. Carrera, M.D.
Gastroenterology
Maricopa Medical Center
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St. Joseph's Hospital & Medical Center

Correspondence

The Dilemma of the Board of Medical Examiners

Editor—

This is an attempt to make all members of The Arizona Medical Association aware of the present status of *Continuing Medical Education and especially what the Board of Medical Examiners have done to come to the rescue of our belabored profession.* The members of BOMEX are to be commended on their efforts as will be apparent as the reader proceeds in this presentation.

The problem facing all practitioners of medicine in the State of Arizona is the present requirements that in order to maintain one's license in this State it is necessary to produce evidence of 150 hours of continuing medical education credits in order to avoid a cancellation of the license you now hold to practice medicine in this state.

The Arizona Medical Association was the instigator of this requirement in that at one time ArMA stipulated that failure to "live up" to the 150 hours of CME credits would result in cancellation of membership in the *Arizona Medical Association*. The legislature then passed a law (with concurrence from the Arizona Medical Association) that it would be necessary to produce evidence of these 150 credit hours in order to maintain licensure. When this occurred the Arizona Medical Association withdrew from its primary demand of 150 hours in that licensure was of more concern to practicing physicians than was the membership in The Arizona Medical Association, and further that anyone qualifying for a license and "living up to" the new law was satisfying whatever demands had previously been made. Ah so!—the monkey was on the back of the Board of Medical Examiners and the Arizona Medical Association gave thanks for this relief from turmoil in that it no longer became necessary to keep a file on each member of the Association and it immediately eliminated certain personnel and certain expenses that had to be assumed by the Board of Medical Examiners. It passed a hot potato to BOMEX—and the latter had no choice but to take over. This resulted in an expenditure of tax dollars of the state of Arizona rather than an expenditure from the financial reserves of The Arizona Medical Association.

The *Board of Medical Examiners* has been unhappy with this result. In a first letter from the Executive Director of BOMEX he stated that the licensure requirement was causing a good deal of activity which interfered with the primary responsibility of the Board and that efforts were being made to alter the requirement. In a second letter from the Executive Director (Douglas N. Cerf), dated June 7, 1983 (and a copy is herewith enclosed) he states "The Board is in the process at this time of redrafting its rules concerning participation in CME with the hope of developing an *Honor System* where each physician is required to indicate that he has participated in a minimum of twenty hours of CME each year. The Board would allow the twenty hours to be in all categories of CME and not in the limited Category I as currently in effect."

One might question as to whether the legislature passed a law which allows the *BOMEX Board of Directors* to alter the requirements. I have investigated this both from statements in the law and from consultation with knowledgeable legislators. I assure each and every member of the Arizona Medical Association that BOMEX does have that power and designated authority.

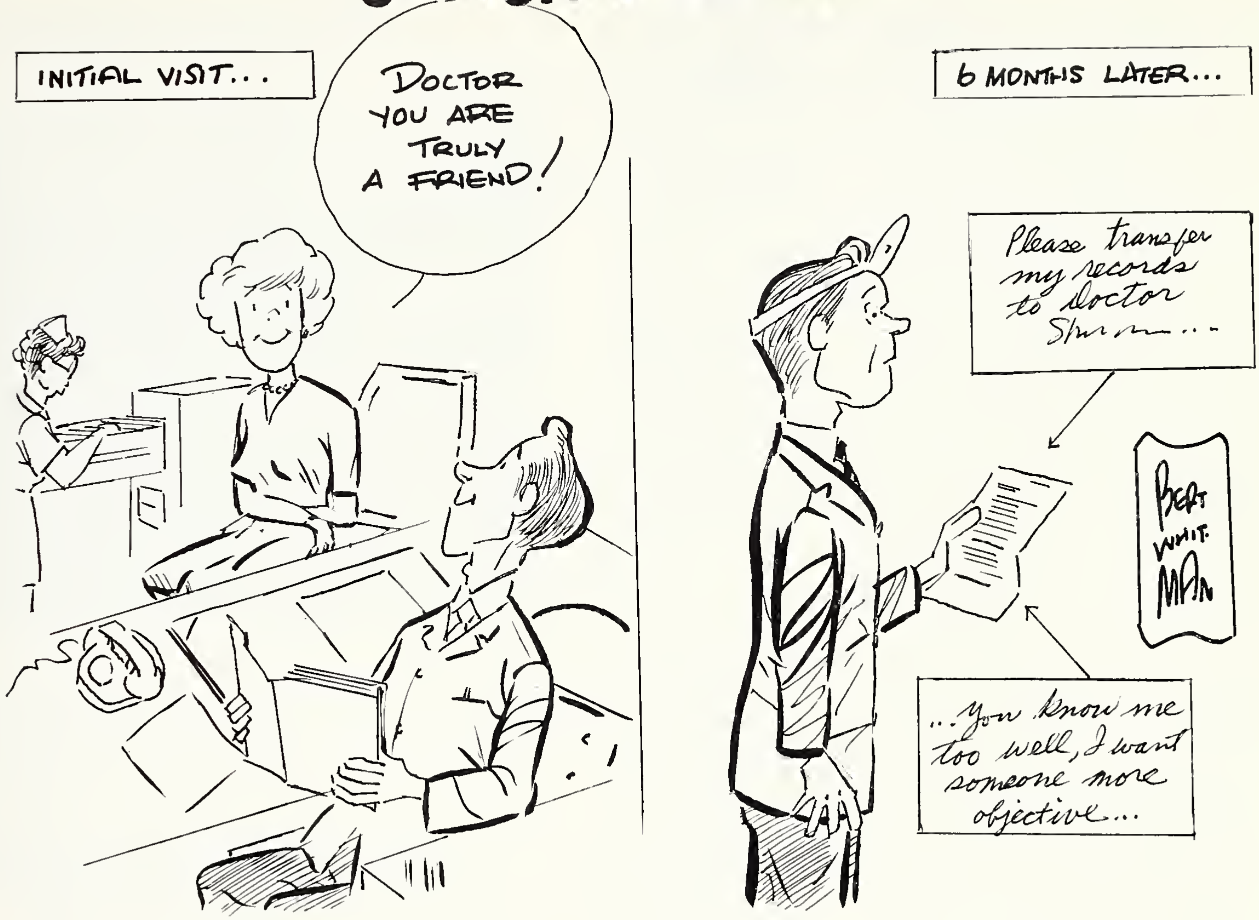
As much as a number of the members of the Arizona Medical Association might desire a change in the law to remove the mandatory requirement this will not happen and any one going before the legislature with the hope of getting a change in the law is whistling Dixie. The legislators have to stand on a tenet that they are protecting the public interest in the mandatory requirement. To rescind and excise such a mandatory requirement from the books would make the legislators in jeopardy as failing to demand the best in medical care for the citizens of the state of Arizona.

The fact that BOMEX is pointing toward relief does not mean they are bypassing the mandatory requirement They are making it possible for the members of the *Arizona Medical Association* to voluntarily *(on the hon system)* maintain their licensure witho being coerced. This is most commendatory.

BOMEX is worthy of the support of all of us in the practice of medicine ar I trust their intention for a redrafting c the rules does become a reality. Our tax dollars would not be spent foolishl and the personnel of BOMEX could pa attention to the more pressing problems of that office.

Dermont W. Melick, M.D.
Phoenix, Arizona

CONFLICTS in Medicine


INITIAL VISIT...
DOCTOR YOU ARE TRULY A FRIEND!
6 MONTHS LATER...
Please transfer my records to Doctor Shu...
..You know me too well, I want someone more objective...
BERT WHIT. MAN

Library Talk

The University of Arizona Health Sciences Center Library Sixteen Years Later

Bertha R. Almagro

The 1967 September issue of *Arizona Medicine* proudly heralded the opening of the College of Medicine at he University of Arizona in a ommemorative edition, compiled entirely by the faculty of the College of Medicine. A profile of the Library ppeared among the various contributions to this number, emphasizing its relevance as a central learning resource in medical education. Planning for the development of the Library's collection began as early as 1965, and by the following year it started to take shape. The scattered pieces acquired through purchases and gifts were transformed into the core of a bound-volume collection reaching the 10,000 mark, and by 1967 it had doubled in size. When the Library opened its doors, it subscribed to 1,600 serial titles, with emphasis placed on the acquisition of medical journals. Today, 16 years after that eventful occasion, the Library boasts a current subscription of approximately 3,300 serial titles, and ranks ninth in total volume of serial subscription among 129 academic medical libraries in the U.S. and Canada. The combined number of bound volumes (books and journals) surpasses 130,000 pieces. To this, is added approximately 2,800 audiovisual programs held by the Library's Media Department.

Accordingly, Library services have expanded simultaneously with the growth of the collection. Interlibrary Loan activities reached staggering proportions, with more than 18,000 transactions completed during fiscal year 1982/83. The number of online computer searches conducted surpassed the 2,000 mark, and the Field Office, rendering services to hospital libraries and health care providers throughout Arizona, continued serving an ever increasing number of communities and individuals.

Through the years, the Library has added some highly sophisticated technological equipment to improve the quality and enhancement of its services. For example, the Library is a member of the On-Line Library System (OCLO), and utilizes two of their subsystems, Cataloging and Interlibrary Loan. The Cataloging Subsystem allows us to access over nine million records for books and journals located in libraries across the nation, greatly expediting the cataloging of material acquired every year. The OCLC Interlibrary Loan Subsystem promotes the fast processing of requests for books and journals needed by our users. This service will be further enhanced by the availability of an Electronic Mail System called Ontyme, to be installed by the end of this fiscal year. All the resource libraries in our region will eventually be linked, and hospital libraries can access the system for Interlibrary Loan requests, or for other messages with the terminals they use for MEDLINE searching. The Library also shares an Online Circulation System (GEAC) with the University of Arizona Main and Science Libraries, which allows us to tap each others' resources. Access to MEDLINE and other databases containing millions of articles from a wide range of publications further enhance the value of our services making available to our users a wealth of scientific and medical papers.

Exciting plans for a total library integrated system, in which all the functions of the Library will be automated, are under study. One of the most dazzling features will be the availability of an online catalog that will allow the users to access the bibliographic records of all the campus libraries, while at the same time being able to identify each library's particular collection. By following simple commands, the user will be able to locate the desired record without any trouble, since besides the traditional author, title, and subject approaches utilized when searching in the card catalog, the new medium will allow key-word access, and possibly the capability to perform Boolean search.

Even though the University of Arizona Health Sciences Center Library has come a long way, and now serves the Colleges of Medicine and Nursing, and in general the College of Pharmacy, as well as the School of Health Related Professions, our goals and our philosophy have remained the same. To provide the best possible services and offer support to the faculty, staff, and students of the Arizona Health Sciences Center, the health workers of Arizona, and the community in general. The commitments expressed in that article published 16 years ago still hold true. We will conserve the best of the past, we will serve the present, and we will plan wisely for the future.

Medical History

Records of Demise

John W. Kennedy, M.D.

For these demise notes of one time Arizona citizens, we are indebted to Dr. Louis Kossuth. Dr. Kossuth has a long list of accolades some of you may not be too familiar with. He was a flight surgeon in the United States Army Air Corps, World War II, and specialized in Public Health when the Air Force became a separate service. He was one of the principal founders of the American Board of Public Health and a founder of the American College of Preventive Medicine. After retirement from the Air Force, he was Commissioner of Health for this fair state. We are indebted to him for rescuing some copies of early death certificates, some of which are rather unique.

Edith E. of Fort Apache was given the following cause of death. "Accidental scalding for which no person was to blame directly. This baby was playing near the campfire and was scalded from boiling water overturning, missing the observation of parents." A Wallapi squaw, "burned to death in cabin by dress catching fire from stove." An Apache from Ganado "burned foot while asleep and died of shock."

Not all of the deaths were violent. This patient from Bisbee died from "croupous laryngitis following smallpox."

An Indian, name unknown, was reported from Tuba City about July 15, 1911, and the cause of death "was said to have been bitten by a snake."

Christian C. on May 15, 1893 died of arsenic poisoning some place in Cochise County and the certificate was signed by James F. Duncan, J.P.

Charles M. of Hackberry in Mohave County October 28, 1887 was reported to have died "overdose of morphine." *(The more things change the more they become the same.*

George O. of Cochise County met his end in 1894 from alcoholism.

A mining accident took Phillip H. In 1897, William P. lost out "being caved on in Mohawk Mine." This mine was located in Pinal county.

Now comes some accidents and some not so accidental causes of demise. A citizen of Polacca on the Navajo Reservation "accident—fell from cliff." It doesn't say whether he was pushed or fell. Then there follows instances lik "fractured skull from fall from hammock." The vicissitudes of a hammock swing were indeed fatal at Sacaton on this October 10, 1912.

Violent death was apparently the order of the day and some of the causes listed are as follows. "Leg crushed by falling rail accident contributory amputation of leg," Morenci 1924.

Gunshot wounds were in abundance for instance 1887 "gunshot wound in the abdomen, accidentally *inflicted* by himself." Then there was "perforating gunshot wound of abdomen and pelvi Homicidal. A cavalryman from Fort Huachuca, July 12, 1917.

Septic infection following gunshot wound. Homicidal. At San Carlos in 1910. Now we get a little more specific How do you like this one? "Gunshot wound inflicted by Edward Robertson at Lone Star Ranch near Fort Huachuca." *(Nothing is said about whether they tried the shooter or not)* A little more succinct was the cause of death as "gunshot wound." With a littl more anatomy another one reads "gunshot wound of the abdomen." Th one had "multiple wounds." But by 1916 "general septicemia following gunshot wound." But Edward W. of Winslow in 1894 got this short cause, "shot."

Another soldier from Fort Huachuca "ruptured lower lobe right lung and contusion of colon due to being run over by a wagon." In 1895 another character, "he was freighting." In coupling up his loaded wagon he hit his head against a bolt under the wagon bed. He thought little of it, but later on it turned to cancer which terminated in his death." And there you have it.

In 1910 a Navajo brave "fell from housetop, immediate death."

On the Pima reservation "injury to spine, result of kicked by horse." In Mammoth in Pinal County this fatality was from "wounds received by horse falling on him."

Injuries of unknown origin or at leas not stated was such as "laceration of the bladder," "fracture of the base of the skull and other injuries."

But the strangest cause of death, probably in recorded history, was giver on January 29, 1916 concerning Rosa V. who died at San Xaviar follows. "Dr. Thomas, he wouldn't come—too busy,' and there follows, Dr. Thomas stated that, "he was too busy to come when requested by father on telephone, so an aunt of Valdez said."

Well there must have been a few of the early settlers who died quietly in bed, but some others met perplexing situations they could not tolerate.

Historical Picture of the Month

The Flight Surgeon of this Bomb group—far left is Major Louis Kossuth suited up with the 340th Bomb Group 12 Air Force, Italy, March 1945. This Bomb run was to Brenner Pass R.R. and Marshalling areas.

The Arizona Medical Association, Inc. Resume'

of the House of Delegates 1983 Special Meeting October 8, 1983

Special meeting of the House of Delegates of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, Saturday, October 8, 1983, convened at 1:16 p.m., Robert A. Price, M.D., Speaker of the House, presiding.

Credentials The Credentials Committee reported a quorum present and the House duly constituted.

Roll Call On the roll call 29 Delegates (and/or Alternates), 16 members of the Board of Directors, 1 nonvoting Alternate, 1 nonvoting Past President and the nonvoting Parliamentarian were present.

Resolutions The two resolutions before the House were considered individually and the following actions taken on motions regularly and duly made and carried:

(Note: All italized language represents deletions. All fully capitalized words are new material.)

Resolution No. S-1-83

Subject: Bylaws of The Arizona Medical Association, Inc. Regarding Direct Member Option

Whereas, The Maricopa County Medical Society, one of the component societies of The Arizona Medical Association, Inc., by vote of its membership, has changed its bylaws to provide for a direct membership option, i.e., a physician may join the Maricopa County Medical Society without becoming a member of The Arizona Medical Association, Inc., and vice versa; and

Whereas, This action by the Maricopa County Medical Society would appear to be in violation of the Bylaws of The Arizona Medical Association, Inc., which, in turn, would permit The Arizona Medical Association, Inc. to revoke the charter of such society; and

Whereas, After deliberate consideration, The Arizona Medical Association, Inc. has determined to choose an alternative approach to addressing the problems and issues involved by amending the Bylaws of The Arizona Medical Association, Inc. to provide either for "component" members through a unified or deunified county society or "direct" members who are not members of any county society; and, therefore, be it

Resolved, That the Bylaws of The Arizona Medical Association, Inc. be amended to read in their entirety as follows:

"Bylaws of The Arizona Medical Association, Inc.

Chapter 1

Definitions

Except where the context otherwise requires, as hereinafter used:

The phrase 'Annual Meeting' shall mean such postponed or adjourned Annual Meeting as may be held, unless the sense otherwise so requires—

The word "Articles" *shall* means the Articles of Incorporation of the Association.

The word "Association" *shall* means The Arizona Medical Association, Inc.

The word "Board" *shall* means the Board of Directors of the Association.

"COMPONENT MEMBER" MEANS AN ASSOCIATION MEMBER WHO IS ALSO A MEMBER OF A COUNTY SOCIETY, WHETHER UNIFIED OR DEUNIFIED.

The phrase "County Society" *shall refer to* MEANS the chartered medical society of any *one of the various counties of the State of Arizona*, COUNTY IN ARIZONA WHETHER UNIFIED OR DEUNIFIED.

The word "Delegate" *shall* means a member of the House.

"DEUNIFIED COUNTY SOCIETY" MEANS A COUNTY SOCIETY WHOSE BYLAWS DO NOT MANDATE MEMBERSHIP IN THE ASSOCIATION.

"DIRECT MEMBER" MEANS AN ASSOCIATION MEMBER WHO IS NOT A MEMBER OF A COUNTY SOCIETY.

The word "Director" shall mean a member of the Board;

The word "House" *shall* means the House of Delegates of the Association.

The word "Journal" *shall* means the *official* Journal of the *Arizona Medical* Association, *Inc.*, *and,*

"UNIFIED COUNTY SOCIETY" MEANS A COUNTY SOCIETY WHOSE BYLAWS MANDATE MEMBERSHIP IN THE ASSOCIATION.

Chapter II

Membership

Section 1. General Requirements:—An active member in good standing of a county society *is automatically* IS an active member of *this* THE Association must be an active member of a county society, with the *exception of student members* FOLLOWING EXCEPTIONS: (A) MEDICAL STUDENTS AND (B) PHYSICIANS RESIDING IN A COUNTY WHOSE COUNTY SOCIETY IS DEUNIFIED.

Any person, when becoming a member, shall agree to abide by the Articles of Incorporation and Bylaws of the Association and by any lawful changes which from time to time may be made. The member further agrees to abide by the Code of Ethics *as laid down by* OF the American Medical Association as *it now exists*, or *may hereafter be amended*.

Section 2. Voting Member*ship*:—The voting membership of the Association shall consist of the Delegates, or, in their absence, their alternates, plus the members of the Board. *They* THE VOTING MEMBERS shall represent the membership at large and shall have such powers and duties as hereinafter described.

Section 3. Classes of Membership:—*This* THE Association shall consist of COMPONENT AND DIRECT MEMBERS IN THE FOLLOWING CLASSES: Active, Fifty-Year Club, Associate, Service, Affiliate and Honorary. *members as follows:*

(A) Active Members

All active members of all the county societies shall be active members of this Association. The minumum qualifications for active membership (other than for interns, residents and medical students) *in a county society* shall be that the individual must (1) hold a degree of Doctor of Medicine or its equivalent or Doctor of Osteopathy, (2) be an American citizen or have made application for American citizenship papers (in which case reasonable progress must be made toward full citizenship or the membership shall lapse), (3) hold an unrevoked license to practice medicine and surgery or osteopathic medicine and surgery in *the State of* Arizona, AND (4) be a legal resident of *the State of* Arizona. Subject to these minimum *qualifications* REQUIREMENTS and to the provisions for loss of membership (Chapter II, Section 4), each county society shall be the exclusive judge of the qualifications of its members AND THE ASSOCIATION SHALL BE THE EXCLUSIVE JUDGE OF QUALIFICATIONS OF DIRECT MEMBERS.

Interns and residents who are licensed or registered with the ARIZONA Board of Medical Examiners *of the State of Arizona are* SHALL BE eligible for active membership *in a county society*. These members shall constitute the membership of the Arizona Medical Association Resident Physician Section.

Full-time students who are pursuing a course of study leading to the degree of Doctor of Medicine or DOCTOR OF Osteopathy in an accredited school of medicine or osteopathy located in Arizona shall be eligible for active membership in the *Arizona Medical* Association *either directly or through the local county medical society*. These members shall constitute the membership of the Arizona Medical Association Medical Student Section.

Members of the Resident Physician Section, the Medical Student Section and the Hospital Medical Staff Section are eligible to serve as Delegates to the Resident Physician, Medical Student and Hospital Medical Staff Sections of the American Medical Association.

Rights. An active member shall have all the rights and privileges of the Association as herein provided. Intern and resident active members shall NOT BE REQUIRED TO pay *no* dues for the *full* calendar year in which they first become a member and, thereafter, shall BE REQUIRED TO pay ten per cent of the dues of other active members and *will* SHALL be exempted from special assessment. Student members shall BE REQUIRED TO pay such dues as may be determined by the House. *of Delegates.*

(B) Fifty-Year Club Members

Active members who have practiced medicine and surgery for fifty years or longer, at least half of that time in *the State of* Arizona, may be honored by elevation to the Fifty-Year Club *a*t the discretion of the Board.

Rights. Fifty-Year Club members shall enjoy all of the rights and privileges of active members but shall *no longer* NOT BE REQUIRED TO pay Association dues.

(C) Associate Members

Associate membership may be granted by the county societies FOR COMPONENT MEMBERS OR BY THE ASSOCIATION FOR DIRECT MEMBERS to those doctors of medicine or osteopathy who are licensed to practice medicine and surgery or osteopathic medicine and surgery in Arizona but (1) are disabled and unable to practice, (2) are retired from active practice and ARE not eligible for Fifty-Year Club membership, OR (3) *active members who leave practice to undergo a further training period lasting six months or more or for* HAVE LEFT PRACTICE IN THE STATE OF ARIZONA FOR TEMPORARY military service OR FURTHER TRAINING.

Rights. Associate members shall have all the rights and privileges of active member*ship* except the right to serve as a Delegate or to hold elective office. *They* ASSOCIATE MEMBERS shall not be required to pay Association dues and SHALL not be entitled to receive any publication of the *Arizona Medical* Association except by subscription o by gift.

(D) Service Members

A county society may grant Service membership MAY BE GRANTED BY COUNTY SOCIETIES FOR COMPONENT MEMBERS OR BY THE ASSOCIATION FOR DIRECT MEMBERS to regularly commissioned medical officers and commissioned medical officers of th reserve component who hold the degree of Doctor of Medicine *or Bachelor of Medicine* OR EQUIVALENT or Doctor of Osteopathy, on extended active duty with *the United States Army, the United States Navy, the United States Air Force*, THE ARMED FORCES OF THE UNITED STATES AND the United States Public Health Service. *and* The permanent medical officers of the Veterans Administration WHO RESIDE IN ARIZONA ALSO SHALL BE ELIGIBLE FOR SERVICE MEMBERSHIP.

Rights. Service members shall have all the rights and privileges of active members. *They shall* SERVICE MEMBERS SHALL BE REQUIRED TO pay one-quarter the ASSOCIATION dues of active members and may be exempted from special assessments.

(E) Affiliate Members

Affiliate membership may be granted by county societies FOR COMPONENT MEMBERS OR BY THE ASSOCIATION FOR DIRECT MEMBERS to (1) those doctors of medicine who are duly accredited in Mexico, or in OTHER foreign countries, AND WHO ARE engaged in medical missionary and similar educational and philanthropic work IN ARIZONA, (2) Arizona dentists who are members in good standing of their local and state societies, (3) ARIZONA pharmacists who are active members of their *Arizona* State Association, (4) teachers of medicine and allied sciences IN ARIZONA who are not OTHERWISE eligible *to other* FOR membership in *this* THE Association, (5) former active members of *this* THE Association who are now in practice in another state, (6) retired physicians WHO hold*ing* a degree of Doctor of Medicine and *residing* WHO RESIDE in Arizona, and (7) those persons certified as physician's assistants *and residing* WHO RESIDE in Arizona.

Rights. Affiliate members shall enjoy the privileges of attending the scientific meetings, BUT *They* shall not have the right to serve as Delegates or to hold elective office. *They shall pay no* AFFILIATE MEMBERS SHALL NOT BE REQUIRED TO PAY ASSOCIATION dues and SHALL not be entitled to receive any publication of the *Arizona Medical* Association except by subscription or by gift.

(F) Honorary Members

The House *of Delegates* may elect at any annual *session* MEETING as honorary members of this ssociation, doctors of medicine or other persons *of this, a foreign county,* who are distinguished for their rvices or who have risen to preeminence in the ofession of medicine and surgery provided the ndidate for membership is or has been a guest of the ssociation or has performed a meritorious service to the ssociation.

Rights. Honorary members shall enjoy the privileges of tending the scientific sessions, but shall not have the ght to serve as Delegates or to hold any elective or pointive office. *They shall pay no* HONORARY EMBERS SHALL NOT BE REQUIRED TO PAY SSOCIATION dues and SHALL not be entitled to ceive any publication of the *Arizona Medical* ssociation except by subscription or by gift.

Section 4. Loss of Membership:

(A) Active, Associate or Fifty-Year Club membership in *is* THE Association shall be lost by

(i) Final expulsion from *the* A UNIFIED county ciety. *through which there is active membership in this ssociation.*

(ii) Transfer of membership to *a county society of other state, and thereby to* THE MEDICAL SSOCIATION OF another state *association,* except as ovided in Chapter III, Section 3.

(iii) Voluntary resignation BY A COMPONENT EMBER FROM A UNIFIED COUNTY SOCIETY OR LUNTARY RESIGNATION FROM THE ASSOCIATION, ich shall be without prejudice.

(iv) Action of the House of Delegates (*see* Chapter VI, ction 6; Chapter VIII, Section 9).

(v) Revocation of the member's license to practice in izona, *This latter clause shall effect immediate* WHICH EVOCATION SHALL RESULT IN loss of membership as the date of revocation.

(vi) Termination of Board of Medical Examiners gistration of intern or resident active member, *This tter clause* WHICH TERMINATION shall take effect at e end of the calendar year.

(vii) Termination of enrollment in medical school of udent active members.

ii) Failure to pay Association dues and assessments thin one year of the date such become payable, unless ch failure be exempted under Chapter IX, Section 5.

(B) Active, Associate or Fifty-Year Club membership in is Association shall be suspended by:

(i) Suspension of membership *in the* BY A UNIFIED unty society *through which there is active membership this Association.*

(ii) Action of the Board (*see* Chapter VI, Section 6).

(iii) Failure to pay the annual dues and assessments fore the delinquency date.

All *of the* rights and privileges of membership shall be thheld during the period of suspension. *of membership.*

(C) Service, honorary and affiliate membership in *this* HE Association may be withdrawn upon a majority vote the House after recommendation of the Board.

(D) The county society involved and the Association all each notify the other of any change of status under *ese* THE provisions for loss or suspension of embership.

(E) Any physician who may feel aggrieved by action of e society of the county of residence in refusing embership, or in suspension, censure, or expulsion, all have the right to appeal to the Board, and, if such ysician is a member of the American Medical ssociation, *and if the physician so desires,* further to the dicial Council of the American Medical Association. ny physician suspended or censured by the Board, or pelled by action of the House or any county society hich is a party to such appeal to the Board, may appeal *such of these decisions, as the Judicial Council of the American Medical Association will accept,* to the Judicial Council for review. In this event, the decision of the Judicial Council shall be final. In the event the Judicial Council refuses to consider such an appeal, the decision of the Board or the House, as the case may be, shall be final. In hearing appeals, the Board *may* SHALL admit such oral or written evidence as in its judgment will most fairly present the facts, but in *the case of* every appeal the Board as a Board and ITS MEMBERS as individuals shall first make EVERY REASONABLE effort at conciliation and compromise.

Chapter III

County Societies ASSOCIATION CONSTITUENCY

Section 1. Number; Function:—*The membership of this Association shall be organized into county medical societies, with one society to a county.* ASSOCIATION MEMBERSHIP SHALL CONSIST OF (A) COMPONENT MEMBERS AND (B) DIRECT MEMBERS. THERE SHALL BE ONE COUNTY SOCIETY TO A COUNTY. A county society may, at its discretion, provide for the formation of district branches, which may be self-governing in local area problems not involving the entire country. *and* The county society may apportion its delegate representation among such district branches.

Each county society shall have general direction of the affairs of the profession in that county and its influence shall constantly be exerted for bettering the scientific, moral, and material conditions of every physician in the county. Systematic efforts shall be made by each member and by the society as a whole to increase the membership until it includes every eligible physician in the county.

Section 2. *Judge of Qualifications;* Membership in Another County Society:—*Each county society shall be the judge of the qualifications of its members (subject to these Bylaws).* A physician living near a county line may hold membership in a county society other than the county of residence, if that be more convenient for attendance of meetings, upon first receiving permission of the society of the county of residence.

Section 3. Transfer of Membership:— When a COMPONENT member in good standing in a county society OR A DIRECT MEMBER moves to another county in *this (or* ARIZONA OR TO another*)* state, the secretary of the first county society OR THE ASSOCIATION IF THE PHYSICIAN IS A DIRECT MEMBER shall send, or request and without charge, a copy of the moving member's original application for membership and a record of accomplishments in the first society OR THE ASSOCIATION to the secretary of the society of the county OR STATE to which the member is moving. Pending acceptance or rejection by the new society of residence, such member shall be considered in good standing by the first county society *and* AND/OR the Association to the end of the period for which dues have been paid.

Section 4. Roster of Physicians Kept by County Secretary:— The secretary of each county society shall keep a roster of *its* COMPONENT members and, if practicable, a list of nonaffiliated physicians. For each physician, the list shall show the full name, address, college and date of graduation, date of license to practice in *this state,* ARIZONA, and such other information as may be deemed necessary by the Board. The Secretary of the Association shall have a copy of this list, and all changes in the list shall be sent to the Secretary by the secretary of the county society.

Section 5. Distribution of County Programs:— The secretary of the county society shall send a copy of the program of each county society meeting to that county's district director and to the *Association* Secretary OF THE ASSOCIATION.

Section 6. Approval of County Charters:— Charters shall be provided and issued to county societies only on approval of the Board, and shall be signed by the President and Secretary of the Association. Upon recommendation of the Board, the House may revoke the charter of any county society whose actions are in conflict with the letter and spirit of the Articles of Incorporation and Bylaws of the Association. The Articles of Incorporation and Bylaws of the Association shall be binding ON EVERY MEMBER AND on every county society *and every member of every such society,* anything in the constitution and bylaws of any such society to the contrary notwithstanding.

Chapter IV

Officers

Section 1. *Who are Officers:* The following shall be officers of *this* THE Association: the Past-President, the President-Elect, the Vice President, the Secretary, the Treasurer, the Speaker of the House, the Delegates to the American Medical Association, the Alternate Delegates to the American Medical Association, and the District Directors. All of the officers shall be members of and shall constitute the Board.

Section 2. Past-President:— The Past-President, aside from specific duties otherwise herein assigned, shall advise and counsel the President in the discharge of the office of the President and SHALL aid the President by accepting such special assignments as may become appropriate.

Section 3. President:— The President shall be the chief officer of *this* THE Association AND Chairman of the Board *of Directors,* and shall exercise general supervision over its members and affairs. The President shall be installed by the *predecessor* PAST-PRESIDENT at the first general session of the annual meeting.

Section 4. President-Elect:— Aside from specific duties otherwise herein assigned, the President-Elect SHALL prepare for the office of President by assisting the President in the discharge of the President's duties. The President-Elect shall be Vice-Chairman of the Board. *of Directors.*

Section 5. Vice President:— The Vice President shall assist the President in the discharge of the President's duties. In the event of the President's death, resignation removal, or extended absence, the Vice President shall assume the duties of the office of President.

Section 6. Secretary:— The Secretary shall keep or cause to be kept written records of all meetings of the Association, its Board, and its committees, except where the members present at the meeting concerned otherwise direct. The Secretary shall be the official custodian of all *record* RECORDS, books, and papers of the Association, except those properly belonging to the Treasurer, and of the official ASSOCIATION seal. The Secretary's responsibility *is* SHALL BE to aid in the communication and clarification of Association affairs to the membership.

The Secretary shall conduct the official correspondence OF THE ASSOCIATION, including, but not limited to, *the* notification to members of meetings, to officers of their election, to committees of their appointment and duties, and to Delegates and their alternates OF the agenda for the meeting of the House.

The Secretary *shall,* with the cooperation of the secretaries of the county societies, SHALL keep a register of all member practitioners in *the state,* ARIZONA, by counties, and *shall,* on request, SHALL send a copy of this register to the American Medical Association. The Secretary shall supply all county societies with the necessary forms for *their* THE annual membership repor OF COMPONENT MEMBERS.

Section 7. Treasurer:— The Treasurer is the chief financial officer of the Association and Chairman of the Finance Committee. Aside from *such* specific duties as *may be* otherwise herein *provided,* ASSIGNED, the Treasurer shall be responsible for and shall prepare the annual budget. *and to assist in this function the advice* THE TREASURER SHALL SOLICIT the Finance Committee *shall be solicited* TO ASSIST IN THIS FUNCTION. The Treasurer shall receive and hold all funds for the Association, and disburse the same upon proper authorization and approval.

The Treasurer shall correct and receive the dues and assessments *from the county societies* OF COMPONEN AND DIRECT MEMBERS.

The Treasurer shall order an annual certified audit of the accounts of the Association by a Certified Public Accountant of good repute, and shall have authority to pay out of the funds of the Association to the Certified Public Accountant for services rendered. This audit shal serve as a basis for an annual report to the Board and t the House of expenditures and the state of the funds in the Treasurer's hands.

Section 8. Bonding:— All officers and employees of th Association who are charged with receiving, handling, and disbursing funds of the Association shall give bond such sum as the Board may require, with an approved indemnity company and at the expense of the Association.

Section 9. Speaker:— The Speaker shall preside at the meetings of the House and shall perform such duties as custom and parliamentary usage require. The Speaker shall have the right to vote when a vote is by ballot, otherwise only when the Speaker's vote shall be the deciding vote. The immediate Past-President shall serve as Vice-Speaker *for that particular session* and shall assume the duties of the Speaker in the Speaker's absence. In the absence of the immediate Past-President the Vice-Speaker may be elected from the House for tha particular session.

Section 10. Delegates to American Medical Associatio and Alternate Delegates to American Medical Association:— The Delegates to the American Medical Association shall represent the Association and its members in meetings of the House of Delegates of the American Medical Association according to the rules of that body. In the absence of any Delegates to the American Medical Association at its meetings, the Alternate Delegates shall represent *this* THE Association and its members in such meetings according to the rules of that body.

MEMBERS OF THE RESIDENT PHYSICIAN SECTION MEDICAL STUDENT SECTION OR HOSPITAL STAFF SECTION WHO ARE OTHERWISE ELIGIBLE SHALL BE ELIGIBLE TO SERVE AS DELEGATES TO THE RESIDENT PHYSICIAN, MEDICAL STUDENT AND HOSPITAL STAFF SECTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

Section 11. District Directors:— The District Directors shall be the organizers and peacemakers for their respective districts. *They* THE DISTRICT DIRECTORS shall visit the societies in their districts when necessary t improve and increase the zeal of the county societies an their members.

Section 12. Reports:— All officers shall make annual reports through the Board to the House. *of Delegates.*

Chapter V

Election of Officers and Members of the Board

Section 1. General: Qualifications:— All elections for officers shall be conducted as a part of the business of e regular annual meeting of the House. ALL LECTIONS shall be by secret, written ballot. *and* The andidate *receiving* WHO RECEIVES a majority vote for a *articular* AN office shall be elected to that office. If no ne of three or more candidates for a *particular* AN office all receive a majority of the votes cast, the two with the ighest number of votes shall be the candidates in a run-ff election. If there are two candidates only, and the vote a tie, there shall be a run-off election. No person shall e eligible for election to state office, or to the Board, ho has not been a member of the Association for the receding three years, and who was ALSO not a elegate, Alternate Delegate, Director, or a Past-President f a county *medical* society at the time of the election. *No* person shall be eligible for nomination as a Delegate or lternate Delegate to the American Medical Association ho has *not* been a member of the American Medical ssociation for the preceding three years, and who *was ot a* IS ALSO a state OFFICER, Delegate, OR LTERNATE Delegate, *Director, or a Past President* of a ounty *medical* society at the time of election. All officers nd members of the Board shall serve until their ccessors are elected and have accepted the office.

Section 2. Officers are Board Members; Officers lected and Offices Assumed:— All officers automatically HALL become members of the Board upon their election , or assumption of, office. *for a term beginning and nding as elsewhere provided herein.* All officers are HALL BE elected except the President and the Past-resident. These officers *are* SHALL not BE elected but, *stead, the offices are assumed by the President Elect nd the President respectively* SHALL ASSUME THEIR FFICES in the year next following their terms as resident-Elect and President, RESPECTIVELY.

Section 3. Terms of Office; Qualifications:— The llowing officers shall be elected for a one year term: the resident-Elect, Vice President, and Speaker of the ouse. The President and Past-President, though not ected as such, also SHALL have a one year terms. The ecretary and Treasurer shall be elected IN ALTERNATE EARS FOR A TWO YEAR terms *of two years that shall ot run concurrently with the election of these officers to ccur in alternate years.*

The Delegates and Alternate Delegates to the American edical Association shall be elected in accordance with e Bylaws of the American Medical Association. If the ssociation *is* SHALL BE entitled to more than one elegate, not all terms shall run concurrently. Any ominee for Delegate or Alternate Delegate to the merican Medical Association shall also be a member of e American Medical Association.

District Directors shall be elected for a term of three ears.

Only those members of the House of Delegates who are embers in good standing with the American Medical ssociation shall be eligible to vote for Delegates and lternate Delegates to the American Medical Association.

Section 4. Beginning and End of Term:— All officers xcept the Delegates and Alternate Delegates to the merican Medical Association shall assume office nmediately following their election and acceptance of e office. The Delegates and Alternate Delegates to the merican Medical Association shall take office on anuary first of the year following election, or in onformity with any revised rules of the American Medical ssociation. The President-Elect SHALL assume office as resident at the time of the opening of the next general ession of the Annual Meeting.

Section 5. Nominations:— The Nominating Committee hall consist of the last three Past-Presidents, plus *six* SEVEN members appointed by the President from the existing Board of Directors, two of whom shall be from Pima County, two from Maricopa County, *and* two from the other counties, AND ONE DIRECT MEMBER. The Secretary shall inform the individual members of *the* THIS committee of the makeup of *the* THIS Committee as a whole, and shall set a time and place for them to meet, which meeting shall be at least six weeks before the Annual Meeting. The immediate Past-President shall serve as chairman of the Nominating Committee. At this meeting, *the Nominating Committee* THIS COMMITTEE shall select at least two candidates for each elective office to be filled and, at least five weeks before the Annual Meeting, shall forward their slate to the Secretary for dissemination to the *individual* Delegates. Prior to the meeting to finalize a slate of candidates, nominations for the elective offices to be filled shall be solicited from the *component* county *medical* societies, *and* specialty societies, AND FROM THE DIRECT MEMBERSHIP. In the event any nominee withdraws prior to the Annual Meeting, *the Nominating Committee* THIS COMMITTEE shall immediately select a second candidate. *They* THIS COMMITTEE shall present *their* ITS nominations to the Speaker at the Annual Meeting through a Committee on Nominations, appointed from their membership by the Speaker. Other nominations may be made from the floor prior to voting and at the time of the election meeting.

Nominations made from the floor for the office of District Director may be made only by Delegates from the counties in their respective districts OR BY DIRECT MEMBER DELEGATES IF THE OPEN DIRECTORSHIP IS A DIRECT MEMBER REPRESENTATIVE.

Section 6. Geographic Distribution and Election of District Directors AND DIRECT MEMBER REPRESENTATIVES:— There shall be six state districts which shall be designated as CENTRAL (Maricopa County); NORTHEASTERN (Apache, Gila, and Navajo Counties); NORTHWESTERN (Coconino, Mohave, and Yavapai Counties); SOUTHEASTERN (Cochise, Graham, Greenlee, and Santa Cruz Counties); SOUTHERN (Pima County); and SOUTHWESTERN (LA PAZ, Pinal, and Yuma Counties). Each district shall be represented by one Director for the first two hundred active COMPONENT members or fraction thereof, and one Director for each additional two hundred active COMPONENT members or fraction thereof, as determined on October first preceding the Annual Meeting. Terms of District Directors shall not run concurrently.

DIRECT MEMBERS SHALL BE REPRESENTED IN THE SAME MANNER AS THE SIX STATE DISTRICTS, WITH ONE DIRECTOR FOR THE FIRST TWO HUNDRED ACTIVE DIRECT MEMBERS OR FRACTION THEREOF, AND ONE DIRECTOR FOR EACH ADDITIONAL TWO HUNDRED ACTIVE DIRECT MEMBERS OR FRACTION THEREOF, AS DETERMINED ON OCTOBER FIRST PRECEDING THE ANNUAL MEETING.

Chapter VI

Board of Directors

Section 1. Members:— The Board shall be composed of the officers of the Association, any member of the *Arizona Medical* Association who is an officer or trustee of the American Medical Association, and the Editor-in-Chief WHO SHALL BE APPOINTED BY THE PRESIDENT.

Section 2. Term:— The term of each member of the Board and the effective date of its beginning and end, shall be identical to that for the office held by the member concerned.

Section 3. General:— The Board shall be vested with the control and management of the affairs of the

Association, subject only to directives from the House, and shall have the full power and authority of the House between meetings of the House. The Board shall attempt to carry out all of the objectives and purposes of the Association. Through the Chairman, the Board shall make an annual report to the House. Section 4. Vacancies:— The Board shall have the authority to elect replacements for any vacancies in office, except that of the President, and in its membership, such replacements to serve until the next ANNUAL election. In the event of a temporary inability upon the part of any officer, except the President, to perform the duties of his office, *however*, the Board may, *by Resolution,* appoint any other officer to perform the function of said office without the office being vacated, such appointment to be limited to the period of inability and, in no event, to extend beyond the date of the next a*nnual* election.

Section 5. Finances; Budget; Accounting; Vote Required for Nonbudgeted Expenses; Use of Funds; Investments:— The Board shall prepare an annual budget providing for the necessary expenses of the Association, which shall be presented with its annual report to the House. *It* THE BOARD shall be responsible for the proper accounting and auditing of all funds and accounts of the Association. The Board, by a three-fourths majority of a quorum, may authorize the expenditure of funds for nonbudgeted expenses, but shall not have power to acquire indebtedness in the name of the Association without the consent of the House and in conformity with Article XII of the Articles of Incorporation, nor shall funds collected from THE MEMBERSHIP and earmarked by the *membership* HOUSE for one purpose be used for another purpose without proper authorization therefor from the House.

The Board may invest and reinvest such monies as may be available from time to time to create a reserve or sinking fund. The Board may also set up and prescribe proper rules for administering any other funds and foundations as may be authorized by the House.

Section 6. Board of Censors:— The Board shall be a THE Board of Censors of the Association. *It* THE BOARD shall have appellate jurisdiction over questions involving the rights and standing of COMPONENT members of county societies AND ORIGINAL JURISDICTION OF DIRECT MEMBERS. *It* THE BOARD may take original jurisdiction OF A COMPONENT MEMBER when it believes that serious charges brought against a*n* THAT member are not being given proper consideration by the county society concerned. *It* THE BOARD may take original jurisdiction of *problems* ALL MEMBERS OF THE ASSOCIATION IN MATTERS of an ethical nature *referred to the Association.* If *such* THESE MATTERS are brought before the House or ANY general OR COMMITTEE meeting they shall be referred *by these groups* to the Board without discussion.

The Board may utilize the Grievance Committee to investigate ANY cases brought before it and to make recommendations to the Board regarding *their* ITS disposition. The Board may reprimand, censure, or suspend for a definite time, and/*or* may recommend to the House that a member be expelled from the Association.

For those members who are also members of the American Medical Association, such of these decisions as the Judicial Council of the American Medical Association will accept for review, are subject to review by said Judicial Council, whose decisions shall be final. In the event the Judicial Council refuses to consider such appeal, the decision of the Board, or the House, as the case may be, shall be final.

Section 7. Time of Meetings; Who May call:— The Board shall meet preceding the Annual Meeting and within six weeks after the Annual Meeting and at such other times as it deems necessary, subject to call of the Chairman, or on petition of three members of the Board. *The President shall* act as *Chairman of the Board, and the President-Elect shall* act as *Vice Chairman of the Board.*

Section 8. Quorum, Vote:— A majority of members of the Board shall constitute a quorum for any meeting, an unless otherwise specified, a majority vote of the members present and voting shall be required for action

Section 9. Executive Vice President; Offices:— The Board shall employ an Executive Vice President, who need not be a physician, and such other assistants and employees as it may deem necessary to facilitate and carry out the work of the Association. *and* THE BOARD shall specify their salaries and terms of employment. Th Executive Vice President shall be under the direction of the President and the Board, but shall have the supervision of all other employees and shall serve as office manager of the Association. The Executive Vice President shall make an annual report through the Boar to the House. *of Delegates.*

The Board shall also make provision for appropriate offices, furniture, fixtures and supplies therefor for the Association, *its* THE Executive Vice President, assistants and employees.

Chapter VII

Standing and Special Committees

Section 1. Appointment; Ex-offico Members; Reports:- There shall be standing committees as hereinafter specified, and such committees as may *seem expedient i* BE NECESSARY TO carry*ing* out the work of the Association. Vacancies in membership in e*ach such* A committee shall be filled by appointment by the Presiden with the advice and consent of the Board. Unless otherwise provided for in these Bylaws, the chairman of each committee shall be appointed yearly by the President with the advice and consent of the Board. In th event there is a vacancy in the chairmanship of any *such* committee, *the* A NEW chairman *will* SHALL be appointe by the President with the advice and consent of the Board, unless otherwise provided for in these Bylaws. Th chairman and/*or* any COMMITTEE member may be removed by the President with the advice and consent of the Board. The President, President-Elect, and Secretary shall be voting ex-officio members of all such committee Each committee shall submit an annual report through the Board to the House, a copy of which reports shall be sent to each Delegate by the Secretary.

Section 2. Term:— Unless otherwise provided in these Bylaws, each co*mmitt*ee member *(*of a standing committee*)* shall serve for a term of three years. a*nd* The terms of members of each committee shall be so arrange a*s to provid*e that they shall not all expire in any single year. Anything herein to the contrary notwithstanding, th President, with the consent of the Board, may increase o decrease the number of members on any standing or special committee.

Section 3. Notification of Appointment; Initial Meeting:— The Secretary shall notify each COMMITTEE member of his appointment and the chairman of his designation as such. Each chairman shall make every effort to organize his committee and consider initial business within one hundred and twenty days of the end of the Annual Meeting of the *Arizona Medical* Associatio *Inc.*

Section 4. Composition and Duties of Standing Committees:— The composition and duties of the anding committees are as follows:

(a) Articles of Incorporation and Bylaws:— This mmittee shall consist of a chairman and at least nine embers. All members of this committee shall have been embers of the Association for at least five years prior to eir appointment.

This committee shall respond to resolutions of the ouse of Delegates by *reporting its deliberative opinion* SUING AN ANALYSIS OF SUCH RESOLUTIONS d/or preparing proposed amendments to the Articles of corporation and Bylaws. *The* THIS committee shall spond to directives by the Board by *reporting its liberative opinion* ISSUING AN ANALYSIS OF THE RECTIVES and/or preparing proposed amendments. All oposed amendments prepared in response to the House Board directives shall be presented to the Board for its nsideration.

The committee may (Chapter XI, Section 1) propose nendments for introduction to the House of Delegates.

(b) Benevolent and Loan Fund:— This committee all consist of a chairman and at least four members, ne of whom shall be the Treasurer. All other members all have staggered three year terms. as *provided in ection 2 of this Chapter. The* THIS committee shall lminister the Arizona Medical Association Benevolent d Loan Fund and shall have the power to make direct ants from the income of the fund to Association embers in financial distress and loans on a revolving sis to assist worthy young residents of Arizona who esire to secure a medical education.

The details of THE operation of this fund shall be orked out by *the* THIS committee with the approval of e Board. This fund shall be made up of money opropriated to it by the Board or by the House, and, in ldition, any further money in the form of cash gifts or gacies from individual donors. *The* THIS fund shall be aced in the care of the Treasurer and shall be lministered by *the Benevolent and Loan Fund ommittee* THIS COMMITTEE.

The THIS committee further shall have the power to ake direct financial grants to worthy medical school udents who are Arizona residents from funds derived om interest that has accrued on general funds of the ssociation on deposit, subject to approval of the Board. *Directors.*

(c) Claim Review:— This committee shall consist of a airman and at least eight members who shall be opointed with due consideration to specialty and eographic representation. This committee shall review alpractice claims against physicians and other licensed ealth care providers as specified in agreements entered to between the *Arizona Medical* Association and ompanies providing professional liability insurance in *the ate of* Arizona and shall provide medical opinion and lvice to such companies on individual claims as well as eneral claim matters.

(d) Environmental Health:— This committee shall onsist of a chairman and at least five members opointed on a geographic basis and with due onsideration for the specialties and family practice. *The* HIS committee shall represent the Association on all uestions relating to medical relations under workman's ompensation.

I shall also THIS COMMITTEE ALSO SHALL concern self with improvement in industrial safety and the aintenance of good industrial health (rehabilitation) actices.

(e) Executive:— This committee shall consist of *the xecutive Officers of the Association,* the President, the resident-Elect, the immediate Past-President, the Vice President, the Secretary, and the Treasurer. Each MEMBER shall serve in this capacity for the term of his office. *The* THIS committee shall meet as frequently as *is* SHALL BE deemed necessary. *It* THIS COMMITTEE shall review routine matters and correspondence to be presented to and summarized for Board action; SHALL develop policy positions and alternatives for consideration and decision of the Board; SHALL act as an exploratory group to develop affirmative plans for the Association to be considered and acted upon by the Board; and SHALL act as advisor to the central office.

(f) Finance:— This committee shall consist of the Treasurer as chairman and at least three members. *The* THIS committee shall act in an advisory capacity in budgetary and financial matters.

(g) Governmental Services:— This committee shall consist of a chairman and at least five members.

Sections within *the* THIS committee may be appointed for a particular activity, a member of this committee to be designated chairman in each such instance.

The THIS committee *will be responsible to* SHALL develop sources of authoritative information, printed material, personal contact, and other duties assigned, concerning current and proposed medical care activities conducted by federal, state and local governmental agencies; *to* SHALL analyze abstracts and interpret governmental medical care program guidelines, bulletins and regulations; *to* SHALL inform the *Arizona Medical* Association through its organizational structure of governmental medical care policies and positions; and *to* SHALL inform appropriate governmental agencies of policies and positions of the *Arizona Medical* Association. *It* THIS COMMITTEE shall not assume those functions specifically assigned to the Legislative and Medical Economics Committees.

(h) Grievance:— This committee shall consist of the Past-President as chairman and at least six members. At least two members shall be appointed each year for a term of three years. All members of this committee shall have been members of the Association for at least five years prior to their appointment. Not more than three members, excepting the chairman, shall reside in the same county.

This committee may consider any complaint against a member of the Association which directly results from, relates to, or affects professional activities of the member complained against, and either:

(1) has been considered by the county society concerned or a committee thereof, the decision of which society or committee is appealed to the Board by any party to that proceeding, or

(2) was one in which the Board took original jurisdiction pursuant to Chapter VI, Section 6, OR CONCERNS A COMPLAINT AGAINST A DIRECT MEMBER WHICH DIRECTLY RESULTS FROM, RELATES TO, OR AFFECTS PROFESSIONAL ACTIVITIES OF THE MEMBER COMPLAINED AGAINST, or

(3) the county society concerned has requested the Board to act *initially,* having shown that the matter could not *be best* BE handled *even initially* BETTER at the county society level, and the Board has referred such case to *the Grievance Committee* THIS COMMITTEE for investigation and recommendation.

This committee shall make every effort to consider those cases in which it believes it has both the authority and the ability to be of substantial help to the parties concerned. However, *the* THIS committee shall endeavor to avoid taking those cases which can more effectively or appropriately be *otherwise resolved* RESOLVED

OTHERWISE and those cases which already are or appear likely to *shortly* be before the State Board of Medical Examiners or the Courts.

Complaints must be made in writing and signed by the complainant, accompanied *with* BY such documentary evidence as the complainant may desire to submit. In the event *the* THIS committee determines not to consider the matter, it shall promptly so advise the complainant in writing AND returning the complaint and any evidence submitted. If *the* THIS committee decides to take jurisdiction of the matter, it shall promptly provide a copy of the complaint, together with any documentary evidence submitted, to the defendent. The defendent, in a written and signed statement, may present a defense, together with any appropriate evidence. Failure to submit such statement of defense within thirty days from the date of receipt of the complaint and a notice of this provision, without good cause shown, shall be construed as an admission of the charge made in the complaint.

The THIS committee shall make every effort to conduct a thorough investigation so that all of the facts required to arrive at a correct and just result are developed. *The* THIS committee may provide for a hearing under such conditions as it deems appropriate, at which the defendant and complainant *are* SHALL BE invited to appear, in those cases where *the* THIS committee believes that a hearing would be helpful to it in arriving at a correct decision.

The THIS committee shall make such provision as it deems appropriate *to adequately* TO protect the Association and the physician concerned from the patient's right of privileged communications.

The THIS committee shall then make one of the following recommendations to the Board:

(1) that the defendent is innocent of the charge or the charge is not a wrong, and that no further action be taken, or

(2) that the defendent is guilty of the charge; that the charge is a wrong, and that the defendant should be reprimanded, censured, suspended for a definite time, or expelled from the Association, or the committee may recommend other appropriate action.

The Board *shall*, when necessary, SHALL further define the functions of *the Grievance Committee* THIS COMMITTEE and may establish such rules of procedure as from time to time may become necessary or desirable.

(i) Health Manpower:— This committee shall consist of a chairman and at least eight members giving consideration to geographical distribution. *The* THIS committee shall represent the Association on all questions concerning health manpower training programs, as well as the development of programs to improve the distribution and utilization of health manpower.

(j) Legislative:— This committee shall consist of a chairman and at least eight other members, and shall be appointed on a geographic basis. Subject to the approval of the Board, *it* THIS COMMITTEE shall represent the Association in securing legislation in the interest of public health and of scientific medicine, and in preventing the passage of, or securing the repeal of legislation contrary to those interests. No county society, group of members or individual members shall advance any medical legislation on a state or national level as a representative of the Association without obtaining the consent of this committee.

(k) Long Range Planning:— This committee shall consist of a chairman and at least eight members giving consideration to geographica*l* distribution. The chairman shall be the Vice President of the Association.

This committee shall update the Association's long range goals and objectives.

(l) Maternal and Child Health Care:— This committ shall consist of a chairman and at least eight members t *include* INCLUDING specialty representation from fami practice, obstetrics and gynecology, pediatrics, and a physician representative from the Arizona Department o Health Services. *The* THIS committee shall represent th Association on all questions relating to maternal and ch health care.

(m) Medical Economics:— This committee shall consist of a chairman and at least six members appointe on a geographic basis and with due consideration *of* FC the specialties and general practice. This committee sha deal with matters affecting the economic status of docto of medicine. Sections *will* SHALL be set up within *the* THIS committee and *these* may be enlarged as necessa The purview of this committee shall include:

(1) Governmental Contracts;

2) Health and Accident Insurance, Office Expense Insurance and Group Liability Insurance;

(3) Organized Welfare and Charity Work;

(4) Retirement and Investments, including Group Investments for members.

(n) Medical Education:— This committee shall consist of a chairman and at least eight members appointed ON A GEOGRAPHIC BASIS AND with due consideration for the specialties. *family practice and geographic distribution of physicians,* An ex-offcio member of *the* THIS committee shall be a faculty memb of the College of Medicine of the University of Arizona, *and should be* WHO IS involved in continuing medical education. A chairman shall be appointed annually from among the members who have served for at least two years on this committee or its predecessor committee. *The* THIS committee shall represent the Association on all questions relating to medical education at all levels *and* INCLUDING the College of Medicine of the University of Arizona.

(o) Physician's Health:— This committee shall consist of a chairman and at least seven members with due consideration to geographic distribution and specialty representation.

The THIS committee shall be for the purpose of assisting physicians who have physical or emotional problems which may be affecting or impairing their proficiency in the practice and the quality of their medic or surgical activities. *The* THIS committee shall deal wit each case and follow up as appropriate.

(p) Professional:— This committee shall consist of chairman and at least ten members. A chairman shall be appointed annually from among the members who have served for at least three years on *the* THIS committee.

The THIS committee *will* SHALL be responsible for all professional aspects of medicine, other than the economic and legislative areas and those areas covered by other standing committees. Special interest sections may be created and chairman appointed by the chairma of *the Professional Committee* THIS COMMITTEE, subject to approval by the Board. An advisor to the Arizona Medical Association Auxiliary, Inc. shall be designated (to be chosen from the same geographic are of the state as the current President of the Auxiliary).

(g) Public Relations:— This committee shall consist of a chairman and at least six members. *It* THIS COMMITTEE shall strive to develop an intelligent and wholesome public viewpoint toward the medical profession and public health education by means of the press, the radio, and through the establishment of lay an professional speakers bureaus. *It* THIS COMMITTEE ma estigate fraudulent medical advertising, especially in press or by way of the radio, and recommend to the ard such steps as it deems necessary to curb the same. THIS COMMITTEE SHALL BE ever *be* alert and SHALL tend its cooperation to all individuals and groups erested in the continuing improvement of health and entific progress in the practice of medicine

(r) Publishing: This committee shall consist of the itor-in-Chief as chairman, and at least three members. THIS COMMITTEE shall have authority to arrange for publication of the Journal, and such other blications as the Board may authorize and direct to its ention. *It* THIS COMMITTEE shall also supervise the siness and administrative details, including advertising, ating to such publications. *The* THIS committee shall mpile and prepare for the archives and for the blications of the Association suitable data on the tory of the Association and appropriate statements and cords concerning deceased members.

(s) Scientific Assembly:— This committee shall nsist of at least nine members appointed by the esident with the approval of the Board *of Directors*, *luding* AND SHALL INCLUDE the Vice President as a mber. At least two members shall be from Pima unty, at least four members from Maricopa County and least three members from the remaining *component* UNTY societies AND THE DIRECT MEMBERSHIP. mmittee membership should include representation of major branches of medicine to insure preparation of a gram of interest to all members of the Association. ggered terms shall be for three years. The chairman all serve one year after appointment, following two ars of membership on *the* THIS committee, preferably of which shall have been as assistant chairman. *The* IS committee shall elect an assistant chairman nually from among its members. The duties of *the* THIS mmittee *are* SHALL BE to arrange for scientific etings.

(t) Underwriting Review:— This committee shall nsist of a chairman and at least eight members who all be appointed with due consideration to specialty d geographic representation. This committee shall ction as a peer review panel to assist with underwriting malpractice insurance coverage for physicians and er licensed health care providers as specified in eements entered into between the *Arizona Medical* sociation and companies providing professional liability urance in *the State of* Arizona.

Chapter VIII

House of Delegates

Section 1. Composition of House; Meetings:— The use shall constitute the voting body of the Association d shall be composed of the *elected* Delegates of the LLOWING: county societies, DIRECT MEMBERS, *cted Delegates of the* specialty societies, *elected* *legates of* the Arizona Medical Association Resident ysicians Section, *elected Delegates of* the Arizona dical Association Medical Student Section, AND *cted Delegates of* the Arizona Medical Association spital Staff Section. *and the members of the Board.* MBERS OF THE BOARD SHALL BE VOTING MBERS OF THE HOUSE. *Delegates who are thereafter cted as officers do not by such election lose their tus as voting Delegates in the House.* The Past sidents of the Association shall be ex-officio members he House *of Delegates* without the right to vote.

The House shall meet at least once a year at the time he Annual Meeting. In addition, special meetings of House may be held at any time, upon at least six ek's notice thereof to the Delegates, at the call of the ard, or upon the call of twenty Delegates with delegate representation from at least seven county societies.

Section 2. Number of Delegates:

(a) County Societies:— Each county society shall be entitled to representation in the House by two Delegates, or their alternates, for the first twenty active COMPONENT members or fraction thereof, and one additional Delegate for each additional twenty active COMPONENT members or major fraction thereof, as determined on October first preceding the Annual Meeting.

(b) ACTIVE DIRECT MEMBERS SHALL BE ENTITLED TO REPRESENTATION IN THE HOUSE ON THE SAME NUMERICAL BASIS AS IS PROVIDED FOR ACTIVE COMPONENT MEMBERS.

(c) Specialty Societies:— A state specialty society shall be entitled to representation in the House of Delegates by one Delegate and alternate who shall be members of the Association if (A) the specialty has a national board recognized as a primary board by the American Board of Medical Specialties, and (B) a minimum of twenty members practicing in Arizona, the majority of whom must be members of the Association, and (C) the activity of the specialty society is manifested by an existing organization or structure *exhibiting* WITH a slate of periodically elected officers, *an established* A constitution and bylaws, and a frequency of meeting at least once a year, and (D) by vote of the House *of Delegates* it *is* SHALL BE deemed to be in the best interests of the Association. A specialty society shall have an additional Delegate and alternate for each additional one hundred fifty members of the society who are members of the Association, as determined October first preceding the Annual Meeting.

(d) Resident Physician Section; Medical Student Section:— The Arizona Medical Association Resident Physician Section and the Arizona Medical Association Medical Student Section shall each be entitled to representation in the House by two Delegates or their alternates who must be ACTIVE members of the Arizona Medical Association.

(e) Hospital Medical Staff Section:— Each hospital medical staff within *the State of* Arizona shall be entitled to *select* ELECT from AMONG the physicians on its medical staff, one representative, who must be an active member of *this* THE Association, to the Arizona Medical Association Hospital Medical Staff Section, which section shall be charged with the responsibility of studying changing hospital policies, informing colleagues of those changes, and protecting the quality of care in Arizona hospitals.

The Arizona Medical Association Hospital Medical Staff Section shall be entitled to representation in the House by two Delegates or their alternates.

Section 3. Election of Delegates; List Thereof:— Sufficiently in advance of the Annual Meeting THE COMPONENT MEMBERS OF each county society, THE DIRECT MEMBERSHIP, each specialty society, the Arizona Medical Association Resident Physician Section, the Arizona Medical Association Medical Student Section, and the Arizona Medical Association Hospital Medical Staff Section shall elect Delegates and an equal number of alternates to represent it in the House AND SHALL SEND TO THE SECRETARY OF THE ASSOCIATION A LIST OF SUCH ELECTED DELEGATES AND ALTERNATES NOT LATER THAN TWO MONTHS BEFORE THE ANNUAL MEETING. In the absence of any Delegate, the alternate may vote in the Delegate's name on any question before the House. *The secretary of each county society, each specialty society, the Arizona Medical Association Resident Physician Section, the Arizona Medical Association Medical Student Section,* *and the Arizona Medical Association Hospital Medical Staff Section shall send the list of such elected Delegates and alternates to the Secretary of the Association not later than two months before the Annual Meeting.* Representation in the House shall be contingent upon compliance with this provision. A member to be seated *must* SHALL present evidence at the time of appearance at the House of official election by the county society, THE DIRECT MEMBERSHIP. A specialty society, the Arizona Medical Association Resident Physician Section, the Arizona Medical Association Medical Student Section, or the Arizona Medical Association Hospital Medical Staff Section.

Section 4. Payment of Dues and Assessments; County Report: The record of payment of dues and assessments in the offices of the Association shall be final in determining the rights of a *county society* Delegate to participate in the proceedings of the Association and business of the House. Any county society which fails to make its required reports of the record of payment of dues and assessments before the Annual Meeting shall be without representation at such meeting.

Section 5. Annual Meeting of the House; Two Sessions:— The House shall have at least two sessions during each Annual Meeting. There shall be a lapse of at least three hours between the adjournment of the first session and the convening of the second.

Section 6. Committees of the House:— At or before each Annual Meeting, the Speaker shall appoint the following committees from among the Delegates or Alternate Delegates: Credentials; Nominations; Amendments; Reports and Resolutions; and such other committees as the Speaker may *from time to time* designate. Each *of such* committees, unless otherwise specified, shall consist of at least three members, who shall serve during the Annual Meeting for which they *are* SHALL BE appointed.

(a) The Committee on Credentials shall examine the credentials of each Delegate or alternate claiming membership in the House, and SHALL recommend the seating of those holding proper credentials. *It shall also* THIS COMMITTEE ALSO SHALL report to the Speaker as to whether a quorum is present, and its members shall act as sergeants at arms.

(b) The Committee on Nominations shall be a committee of at least three selected from and representing the Nominating Committee, *as described in Chapter V, Section 5,* AND shall present the nominations of the Nominating Committee to the House. *and* MEMBERS OF THIS COMMITTEE shall act as tellers.

(c) The Committee on Amendments shall receive all proposals to amend the Articles of Incorporation and these Bylaws, presented at the first session. *and* the time and place of the committee meeting shall be posted and announced in order that proponents and opponents of proposed amendments may be heard. *The* THIS committee shall make its report to the House at the second session.

(d) The Committee on Reports and Resolutions shall receive and review all reports of officers, the Board, the Executive Vice President, and standing and special committees, and all resolutions and other proposals not specifically delegated to other committee(s) WHICH ARE introduced at the first session. *The* THIS committee shall consider the same at a meeting, the time and place of which shall be posted and announced in order that proponents and opponents of the various resolutions and proposals may be heard. *The* THIS committee shall make its reports thereon at the second session. *of the House.* New business, not provided for in the orders of the day for the second session, cannot be considered at that session except by suspension of the rules.

Resolutions may be proposed by (a) the Board, (b) ar member of the House *of Delegates,* (c) any county society, (d) any committee or section of the Association or (e) *by* a petition signed by twenty or more members the Association. All resolutions are to be accompanied a fiscal note where appropriate.

At the discretion of the Speaker, more than one Committee on Reports and Resolutions may be appointed. *in accordance with Chapter VIII, Section 6, Committees of the House.*

Section 7. Quorum; Minimum Requirements for Vote:- Twenty Delegates, or their alternates, with representati from seven county societies shall constitute a quorum, and unless otherwise specified herein, a majority vote o the quorum shall be required for action.

Section 8. Participation by Nondelegates in Meeting the House:— All meetings of the House, except its executive sessions, shall be open to members of the Association; nondelegate members *shall have no right t* MAY participate in such meetings *except* upon majority vote of the House.

Section 9. Powers and Duties of the House:— The House shall:

(a) Elect all officers of the Association, except *for t President, Past President and* THE Editor-in-Chief, *(*whc shall be appointed by the President*) which elected officers, together with the President, Past President and Editor-in-Chief, shall constitute the Board.*

(b) Vote on all memorials and resolutions presentec to it;

(c) Instruct the Board on its wishes respecting the operations of the Association;

(d) Budget the expenses of the Association;

(e) When necessary, amend the Articles and Bylaw

(f) When recommended by the Board, vote upon th expulsion of a member of the Association. A two-thirds majority shall be required to expel; and

(g) Hold all powers and duties not otherwise specifically delegated herein.

Section 10. Items of Business for Annual Meeting:— The following shall be the items of business of the Annual Meeting of the House:

First Session

(a) Call to order;
(b) Report of the Committee on Credentials;
(c) Roll Call and seating of the Delegates;
(d) Reading of the minutes of the last meeting;
(e) Announcement of the appointment of Committees of the House;
(f) Introduction of reports and resolutions;
(g) Introduction of proposed amendments;
(h) Reading of memorials;
(i) Unfinished business;
(j) New business;
(k) Adjournment.

Second Session

(a) Call to order;
(b) Report of the Committee on Credentials;
(c) Roll Call and seating of the Delegates;
(d) Reading of the minutes of the last meeting;
(e) Report of the Committee on Nominations, nominations from the floor and election of officers exce for the nomination and election of those officers provid for in subsection 'j' hereof;
(f) Report of the Committee on Amendments, and final action thereon;
(g) Report of the Committee on Reports and Resolutions, and final action thereon;
(h) Unfinished business;
(i) Other business;

(j) Report of the Committee on Nominations, ominations from the floor, and election of District irectors and Alternate Delegates to the American edical Association;

(k) Adjournment sine die.

Chapter IX

Dues and Assessments

Section 1. Fixing of Annual Dues; Payments; einstatements; Collections; Enforcement:—

(a)The amount of annual dues shall be determined by e House at the Annual Meeting and shall include a ubscription to the Journal. Any proposal to increase the nnual dues shall be submitted to the Delegates at least ix weeks prior to the Annual Meeting.

(b) The annual dues and the dues and assessments f the *American* ARIZONA Medical Association shall be ayable January first of the year for which levied and hall be delinquent after February fifteenth of that year. *he secretary of each county society shall collect and orward to the Association the dues for its members, ogether with the dues and assessments levied by the merican Medical Association, for those physicians who re its members. At the option of the county society the ssociation may collect the dues and assessments of its embers and the members of the American Medical ssociation, forwarding the applicable dues and ssessments to the American Medical Association, each ounty may collect its own dues and assessments, or the ssociation may collect all dues and assessments, orwarding the applicable dues and assessments to the ounty societies and the American Medical Association.*

EACH COUNTY SOCIETY HAS THE PRIMARY IGHT TO COLLECT THE DUES OF ITS OWN EMBERS. SIMILARLY THE ASSOCIATION HAS THE RIMARY RIGHT TO COLLECT THE DUES OF OMPONENT AND DIRECT MEMBERS, AND THE MERICAN MEDICAL ASSOCIATION HAS THE RIMARY RIGHT TO COLLECT THE DUES OF ITS OWN EMBERS. HOWEVER, SUBJECT TO SUCH PRIMARY IGHT, EACH COUNTY SOCIETY AND THE SSOCIATION, AS WELL AS THE AMERICAN MEDICAL SSOCIATION MAY MAKE ANY MUTUALLY GREEABLE ARRANGEMENT FOR THE COLLECTION F ANY OR ALL OF THESE DUES.

(c) Any member OF THE ASSOCIATION whose dues r the current year have not been remitted to the ssociation on or before February fifteenth *shall stand* AY BE suspended until such delinquency is corrected.

(d) The Board, *may* upon *the recommendation* of a *ounty society,* REQUEST, MAY authorize installment of ues by a member OF THE ASSOCIATION. The first ayment shall be delinquent after February fifteenth of e year for which such dues are levied. The delinquent ates for subsequent payments shall be determined by e Board, but in any event that the final payment would e delinquent after *October* JULY first. Any member OF HE ASSOCIATION whose payment has not been emitted to the Association on or before the delinquent ate shall stand suspended until such delinquency *is* HALL BE corrected. Any installment program for paying ues and assessments for the American Medical ssociation shall be determined by the American Medical ssociation.

Section 2. Fixing of Special Assessments; Payment; ollections; Enforcement:

(a) Special assessments may be levied by the House t the Annual Meeting, or at any special meeting called or that purpose.

(b) Special assessments shall be payable thirty days fter notice of such has been mailed, and shall be delinquent sixty days after *said* THAT date.

(c) Any member who has not paid his special assessment by the delinquency date shall stand suspended until the assessment is paid.

Section 3. Equality Within Membership Categories of Dues and Assessments:—

While the amount of dues or special assessments may vary as between classifications of membership (except as to certain classes upon which none may be levied as provided in subsection 5 hereof), they shall be uniform within each classification, except for service, resident physician and medical student members (see Chapter II, Section 3), and new members (see Chapter IX, Section 4).

Section 4. New Members; Dues; Assessments; Collection and Payment:—

(a) The dues of new active members shall be one-half the annual dues for the full calendar year in which they first become a member and three-fourths the annual dues for the second full calendar year of membership.

(b) The dues of new members elected between July first and November first shall be one-half their annual dues for that year. New members elected in November and December shall pay dues for the succeeding year, which payment shall be taken also to include dues for the balance of the current year. Any forgiveness of the dues and assessments of the American Medical Association shall be in accordance with the rules and regulations of that association, and any forgiveness of special assessments shall be according to such as may have been provided by the meeting of the House levying such special assessment.

(c) The dues of new members shall be collected in accordance with Chapter IX, Section 1(b). Membership in the Association shall not be effective until the same *are* SHALL BE received by the Association.

Section 5. Exemption:—

(a) Members exempted from the payment of dues shall include (1) Fifty-Year Club Members, (2) Associate Members. (3) Affiliate Members, and (4) Honorary Members. Members seventy years of age or older, and other members by reason of physical disability, illness, or financial hardship may also be exempted. A member must request such exemption *secure county medical society recommendation, and be approved therefor by the Board.* THROUGH THE COUNTY SOCIETY IF A COMPONENT MEMBER OF A UNIFIED COUNTY SOCIETY OR DIRECTLY FROM THE ASSOCIATION IF A DIRECT MEMBER. IN ALL CASES, SUCH AN EXCEPTION MUST BE APPROVED BY THE BORAD.

(b) Members exempt from the payment of special assessments include (1) Fifty-Year Club Members, (2) Associate Members, (3) Affiliate Members, (4) Honorary Members, (5) Resident Physician Members, and (6) Medical Student Members. Members seventy years of age or older, and other members by reason of physical disability, illness, or financial hardship may also be exempted. A member must request such exemption, and be approved therefor by the Board.

(c) Exemption from payment of dues to the American Medical Association shall be in accordance with the rules of that association.

Section 6. Refunds: Dues and assessments may be refunded at the discretion of the Board *of Directors* of the *Arizona Medical* Association upon recommendation of a co*mponent* county *medical* society OR BY APPLICATION TO THE BOARD BY A DIRECT MEMBER.

Chapter X

Parliamentary Authority

The rule contained in the latest revised edition of Roberts Rules of Order shall govern the Association and the House in all cases to which they are applicable and in which they are not inconsistent with these Bylaws.

A Parliamentarian may be appointed by the President. The Parliamentarian shall be present at all sessions of the House to provide advice and guidance to the Speaker and to members of the House. The Parliamentarian shall provide advice and guidance to the officers and the Board as required. The Parliamentarian shall have no vote.

Chapter XI
Amendments

Section 1. Who May Propose Amendments:— Amendments to these Bylaws may be proposed by (a) the Board, (b) any Delegate, (c) any county society, (d) any committee or section of the Association, or (e) *by* a petition signed by twenty or more members of the Association. Proposed amendments shall be delivered to the Secretary at least eight weeks prior to the meeting of the House at which the same will be considered.

Section 2. Notice of Proposed Amendments:— Written copies of all proposed amendments shall be distributed by the Secretary to all members of the House at least six weeks before the meeting at which the same will be considered.

Section 3. Introduction of Proposed Amendments:— All proposed amendments shall be introduced at the first session of the Annual Meeting, referred to the Committee on Amendments, and voted upon at the second session of the meeting. A special meeting of the House may be called to consider amendments only, in which instance proposed amendments may be introduced and voted upon at a single session.

Section 4. Vote Required:— An affirmative vote of two-thirds of the Delegates present and voting, or an affirmative vote of a majority of the entire membership of the House, whichever is the lesser, shall be required for the adoption of an amendment to the Bylaws."

ADOPTED—10-8-83

Resolution No. S-2-83

Subject: Granting of Specialty Society Representation

Whereas, The Arizona Society of Allergy has applied for representation in ArMA's House of Delegates; and

Whereas, Such society has met the first three of the criteria set forth in Chapter VIII, Section 2(b) of the Association bylaws, which are more particularly set forth below:

(A) the specialty has a national board recognized as a primary board by the American Board of Medical Specialties, and

(B) a minimum of twenty members practicing in Arizona, the majority of whom must be members of the Association, and

(C) the activity of the specialty society is manifested by an existing organization or structure exhibiting a slate of periodically elected officers, and established constitution and bylaws, and a frequency of meeting at least once a year, and

Whereas, Having met these criteria, such society is entitled to a vote by the House of Delegates regarding such representation; now, therefore, be it

Resolved, That the House of Delegates of the Arizona Medical Association deems it to be in the best interests of the Association that the Arizona Society of Allergy be granted representation by one Delegate in the House of Delegates, said representation to be effective immediately.

Referred to Board of Directors
for further consideration - 10-8-83

Other Business

ArMPAC Membership

Dr. William Neubauer, chairman of the ArMPAC Board of Directors, addressed the House regarding the urgency of physicians to join ArMPAC and become actively involved in the legislative process in order that medicine' voice could be heard on matters of interest to the profession.

Direct Member Option

A brief discussion was held as to the reasons for the recent actions taken by the Maricopa County Medical Society to allow for direct membership, some of which were indicated as being financial, effective channeling of efforts, and perhaps dissatisfaction in certain instances. Several Association officers addressed the members regarding the importance of continued membership in al organizations since a unified profession was necessary t effectively confront the issues with which physicians are currently being faced.

Meeting adjourned Sine Die at 1:46 p.m.

ArMA Reports

The minutes in this section have bee condensed. A complete copy will b sent to any member requesting them.

AD HOC INDIGENT HEALTH CARE COMMITTEE

The Ad Hoc Indigent Health Care Committee met on October 20, 1983.

The Chairman opened the meeting by asking Dr. Baker to give an overvie of the formation of the Committee. D Baker said it was formed in response t the AHCCCS proposal. The Committee's original function was to advise and aid in the AHCCCS formation. Seven ideas were submitte to AHCCCS and the majority of them were implemented. The next step for the Committee was participation in th rules and regulation writing. Dr. Bake said that factual data about how the program was working did not appear be available.

Dr. Winograd said the purpose of tonight's meeting was to address some of the problems that are acute and try to establish dialogue with the Legislature and the county and act as catalyst with people who are liable to the consumer. The main concern is quality of care.

The Committee was advised that there is no advisory group for quality care review which reports to the Legislature. Question was asked if the physicians can surface the issue witho trying to sound like they are axing the program. A Patient Assessment of Care survey was suggested as a possible answer. The Stanford Survey was entioned but will not be available til 1986. It was also suggested that CA be contacted and made aware of ysicians' concerns. (Dr. Kurtz dicated that an open-door contact d already been established.)

It was decided that Drs. Winograd, rtz and Westfall arrange a meeting th Don Mathis, Director, Department Health Services, and alert him to rrent concerns about the lack of ssible performance in the quality surance program and ask for a review d update of the AHCCCS program. is meeting would take place before ArMA Executive Committee eeting next week.

Dr. Hale reported that at the present ne the county hospital has lost most their patients under AHCCCS and an en greater concern is what is ppening to the notch group. There is data available on the legal status of notch group because of the broad finition of coverage.

Extensive discussion followed ncerning the various problems taking ce at the county level. The prime ncern seemed to be to spark an erest in the general public to the nsitivity of the needs of the people o are not being treated.

The Committee was advised that John ll, M.D. would be a contact person help with the notch group program ce many county physicians are eady treating patients at no charge h Project Health Care.

t was decided that the following ntacts be made and a breakfast eeting be arranged to discuss what ysicians can do for the county crisis: an Stanton- Jack Pfister; Dr. nograd- Pat Murphy: Dr. Kelly- hop O'Brien; Jerry Burbach- John ll, M.D.

Wednesday, November 2, 1983 at 7:30 n., Phoenix Country Club, was the ntative date set for the breakfast. It s also suggested that physicians who ow the County Supervisors on a rsonal level contact them.

GRIEVANCE COMMITTEE

The Grievance Committee met ctober 28, 1983.

The specific reason for the calling of meeting, i.e., to consider the appeal Mr. and Mrs. Orland N. Nelson of June 30, 1983 decision of the Yuma unty Medical Society regarding their mplaint against Jerome T. Roberge, D., was discussed at length by the mmittee, with Dr. Oakley advising t Dr. Christ had been invited to give ckground information regarding Dr. berge, as well as personal views and opinions as a physician practicing in the same medical community.

Following a thorough review of all facts available to the committee it was moved and carried to advise Mr. and Mrs. Orland N. Nelson that ArMA's Grievance Committee determined that, in his care of Mr. Nelson, Jerome T. Roberge, M.D. should have been more forceful, open and communicative regarding his procedures and findings.

It was agreed by those present that a copy of the letter to the Nelsons would be forwarded to the Yuma County Medical Society and that the society would be informed of the committee's expression of additional concern that Dr. Roberge may have limitations which may prevent him from fulfilling his greatest potential as a urologist and meeting the needs and expectations of his patients, suggesting that an attempt be made to discuss the matter with him, addressing any specific problems which might be identified during the discussions.

Nominating Committee

The Nominating Committee met November 1, 1983.

Pertinent sections of the ArMA bylaws, i.e., Chapter V, which deals with the election of officers and members of the board as well as delineates the makeup and responsibility of this committee, and that portion of Section 6, Chapter VIII, setting forth the role of the Committee on Nominations as it relates to the House of Delegates, were received and reviewed by the committee.

"Achieving Goals: Making Your Mark as a Board Member" (ASAE), "Guidelines for Trustees of the American Society of Internal Medicine" (ASIM) and "Guidelines for Board of Trustees of the Iowa Medical Society" (IMS) . . . Received.

In addition to the foregoing documents, the committee reviewed and discussed suggested—not mandatory—guidelines for assistance in the selection of nominees forwarded from the Washington State Medical Association.

It was moved and carried that guidelines should be developed for use by future nominating committees of the Association following the format provided by the Washington State Medical Association.

A lengthy discussion was held regarding the vital importance of giving thoughtful consideration to the selection of nominees to comprise a slate of candidates for the 1984 elections and of choosing equally strong running mates for each office. The subject of old practices and unwritten rules previously used in the selection process (area selection for certain positions; automatic move from one position to another) was brought up, with the consensus being that these policies were not necessarily the best criteria and choosing the *best* of the medical leadership, regardless of geographics or other considerations, must be of first and foremost importance.

The possibility of having only one candidate, rather than two, for each office, which would require a bylaws change but which is currently the practice in many state associations, was briefly discussed; however, there was strong feeling that ArMA would be involved in a "selection" rather than an "election" process and the committee members believed that membership involvement in choosing leadership was vital.

The list of vacancies to be filled during the 1984 Annual Meeting, attached hereto marked Exhibit "A", were received by the committee. (This list can be obtained from the ArMA office.) The members were requested to give thoughtful consideration to nominee recommendations which would be brought back to the next meeting of the committee, at which time a final selection of candidates would be made.

In conjunction with that selection it was moved and carried that each county and specialty society having representation in the House of Delegates be immediately contacted by letter, informing them of the openings to be filled during the 1984 Annual Meeting of the Association, and requesting that, should they be aware of any member physician in Arizona whom they feel might be a particularly strong candidate for any particular office, they submit their suggestions to the Association office no later than December 31, 1983, so that any and all suggestions can be reviewed and considered by the nominating committee during its next meeting.

A list of female physician members, requested by Dr. Zonis, was presented for the committee's use in considering any possible nominees from that segment of membership. It was additionally agreed by those present that it was very important that attempts be made to involve female physicians in more active participation in the Association. In light of the fact that Dr. Baker would be responsible for committee appointment recommendations to the board in 1984, he was asked to seek input from the female physician membership in an effort to ascertain the number who would be willing and desirous of serving on ArMA committees.

ArMPAC BOARD OF DIRECTORS

ArMPAC Board of Directors met on November 2, 1983.

The meeting opened with a discussion of the ArMPAC/AMPAC Seminar held in Tucson September 30-October 1, 1983. In spite of the bad weather, all participants considered the seminar a most informative one and said they would recommend it highly. Discussion was held on whether to hold a similar event in Phoenix.

It was moved and carried that ArMPAC/AMPAC have a seminar in Phoenix on February 17-18, 1984.

Membership in ArMPAC has almost doubled in the month of October as a result of the mail solicitation. It was suggested that a follow-up letter be sent out with a different theme, i.e., winning team concept—will you help? The letter should also stress that ArMPAC is a bipartisan organization and should mention the tax deduction feature.

It was moved and carried that a follow-up letter, on William N. Neubauer, M.D.'s personal letterhead should go out the end of November.

A discussion followed concerning the amounts currently in ArMPAC's bank account. The possibility of investing these funds in a money market had been discussed at a previous meeting.

It was moved and carried to deposit ArMPAC Funds in a money market account—funds to be available at all times.

Allan Stanton mentioned various fund-raisers that are scheduled from time to time for various legislators. He stated the advisability of ArMPAC contributing in the form of buying tickets, etc., and cited the need for approval and availability of small amounts of money at short notice.

It was moved and carried that the authorization of these lesser funds be approved by the chairman, Treasurer, and any member-at-large from ArMPAC's Committee, with a limit of $200 per contribution, with a report back to the full board at next meeting.

It was moved and carried to purchase two tickets at fifty dollars each for a fund raiser for Senator Jeff Hill, November 10, 1983, to be held at the Kiva Club in Phoenix.

Allan Stanton urged physicians to attend. This contribution will go on record when the contributions are decided in 1984.

The Chairman mentioned that a requirement for a member of the ArMPAC Board of Directors is to join ArMPAC and that currently eleven members of the Board are not members.

Discussion followed on the feasibility of sending the *Legislature Beat* and ArMPAC information to home addresses so wives would be more aware of what is going on.

MARK YOUR CALENDAR

For These Upcoming CURRENT PERSPECTIVES SEMINARS

Presented By
THE ARIZONA MEDICAL ASSOCIATION

January 18, 1984 Wednesday Phoenix	Allergy Luis S. Tan, M.D.—Program Chairman
February 4, 1984 Saturday Tucson	Cancer Robert M. Anderson, M.D.—Program Chairman
March 21, 1984 Wednesday Phoenix	Diabetes Philip Levy, M.D.—Program Chairman
April 26, 1984 Thursday Scottsdale	The Well Adult and Aging Earl J. Baker, M.D.—Program Director

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Future Medical Meeting

The following institutions and organizations h been accredited for their continuing med education programs by the Arizona Med Association and/or the Accreditation Council Continuing Medical Education.

- Arizona Chapter, American Cancer Society
- Arizona Medical Association
- Arizona State Hospital, Phoenix
- Arizona Thoracic Society/Arizona Lung Association
- Walter O. Boswell Memorial Hospital, Sun City
- Camelback Hospital, Phoenix
- Desert Samaritan Hospital, Mesa
- The Eye Foundation
- Flagstaff Hospital & Medical Center of Northern Arizona
- Good Samaritan Medical Center, Phoenix
- Health Maintenance Associates, Phoenix
- Maricopa Medical Center, Phoenix
- Memorial Hospital of Phoenix
- Mesa Lutheran Hospital, Mesa
- Phoenix Baptist Hospital & Health Center
- Phoenix Indian Medical Center
- St. Joseph's Hospital & Medical Center, Phoe
- St. Joseph's Hospital, Tucson
- St. Luke's Hospital & Medical Center, Phoen
- St. Mary's Hospital, Tucson
- Scottsdale Memorial Hospital
- Tucson Hospitals Medical Education Progra (THMEP) Tucson

University of Arizona College of Medicine,
Tucson
Veterans Administration Medical
Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

JANUARY 1984

Crisis and Emergency Pediatrics
January 12-15. El Conquistador Resort, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 17.75 hours of Category 1 credit.

Current Perspectives IV: Allergy
January 18. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Category 1 credit.

Musculoskeletal Diseases in the Aged
January 26-28. Point Tapatio Resort, Phoenix. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Hospital and Medical Center, 525 N. 19th Street. Phoenix, Arizona 85006.

Today's Challenges in Allergy and Immunology
January 28. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 7 hours of Category 1 credit.

ECG Interpretation and Arrhythmia Management
January 27-29. Marriott Hotel, Tucson. Sponsor: International Medical Education Corporation. Contact: IMEC, 64 Inverness Drive, East, Englewood, Co. 80112. Telephone: 800-525-8651 or 303-790-8445, ext. 123. Approved for hour per hour Category 1 credit.

FEBRUARY

Third Annual Critically Ill Child Symposium
February 2-4. St. Joseph's Hospital and Medical Center, Cullen Memorial Building, Phoenix. Sponsor: St. Joseph's Hospital and Medical Center, Department of Pediatrics. Contact: Kathy Volpe, Pediatric Education, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, Arizona 85013. Approved for 15 hours of Category 1 credit.

Current Perspectives V: Cancer
February 4. ArMA Building, Phoenix. Sponsor: Arizona Medical Association, Inc. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85013. Approved for 3½ hours of Category 1 credit.

Clinical Problems in Adolescent Medicine
February 11. Phoenix Hilton. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for seven hours of Category 1 credit.

Eleventh Annual Barrow Neurological Symposium—Stroke
February 13-15. La Posada Resort Hotel, Scottsdale. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., 222 West Thomas Road, Suite 415, Phoenix, Arizona 85013. Approved for hour per hour Category 1 credit.

Inaugural Seminar of the American Association of Orthopaedic Medicine Medical Approaches to the Low Back
February 15-19. La Posada Resort, Phoenix. Sponsor: Maricopa Medical Center Department of Anesthesiology. Contact: Kent Pomeroy, M.D., Secretary-Treasurer, American Association of Orthopaedic Medicine. Approved for 28 hours of Category 1 credit.

Frontiers in Ophthalmology
February 16-18. Mountain Shadows Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Medical Center, 525 N. 18th Street, Phoenix, Arizona 85006. Approved for hour per hour Category 1 credit.

Neurological Therapeutics
February 16-19. Arizona Inn, Tucson, Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for hour per hour Category 1 credit.

**Seventeenth Annual Southwestern Clinical Pharmacy Seminar:
Therapeutic Drug Monitoring**
February 17-19. Ramada Inn, Tucson. Sponsor: U. of A. College of Pharmacy. Contact: Jack R. Arndt, Ph.D., College of Pharmacy, U. of A. Health Sciences Center, Tucson, Arizona 85721. 9 hours of Category 1 credit applied for.

**26th Annual Meeting
South Central Association of Blood Banks**
February 19-22. Albuquerque Regent and Convention Center, New Mexico. Sponsor: South Central Association of Blood Banks. Contact: Linnelle Wilson, Executive Director, South Central Association of Blood Banks, P.O. Box 4679, Austin, Texas 78765. Approved for 28 hours of Category 1 credit.

Advances in Obstetrics and Gynecology
February 22-24. Scottsdale Hilton. Sponsor: Maricopa Medical Center: Contact: John V. Kelly, M.D., Department of OB/GYN, Maricopa Medical Center, 2601 E. Roosevelt, Phoenix, Arizona 85008. Approved for hour per hour Category 1 credit.

Emergency Care Update VI
February 27-29. Arizona Health Sciences Center, Tucson. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, University of Arizona Health Sciences Center, Tucson, Arizona 85724. Approved for 23 hours of Category 1 credit.

Southwestern Seminar on Recent Advances In Neurology and Neurosurgery
February 29-March 3. Sheraton El Conquistador, Tucson. Sponsor: University of Arizona Health Sciences Center. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724. Approved for 13.5 hours of Category 1 credit.

FAR WESTERN MEDICAL ASSOCIATION
January 28—February 4, 1984
Sun Valley, Idaho

Theme: "What's New in Medicine and Surgery"

Spring Scientific Meeting
March 3—17, 1984
Cortina, Italy (first week)

Theme: "Medicine in Europe Today"

Approved for hour per hour Category I credit

Please write to:
Far Western Medical Association
P.O. Box 3817
Van Nuys, California 91407
for detailed information

1984 CME CRUISE/CONFERENCES ON LEGAL—MEDICAL ISSUES

Caribbean, Mexican, Hawaiian, Alaskan, Mediterranean. 7—14 days in Winter, Spring, Summer. Approved for 18-24 CME Category 1 credits (AMA/PRA). Distinguished professors. FLY ROUNDTRIP FREE ON CARIBBEAN, MEXICAN, & ALASKAN CRUISES. Excellent group fares on finest ships. Registration limited. Pre-scheduled in compliance with present IRS requirements. Information:

International Conferences
189 Lodge Ave.
Huntington Station, NY 11746
(516) 549-0869

MARCH

5th Annual Sports Medicine Symposium Olympic Medicine
March 8-10. Marriott Hotel, Tucson. Sponsor: University of Arizona College of Medicine. Contact: Office of Continuing Medical Education and Outreach, U. of A. Health Sciences Center, Tucson, Arizona. Approved for 19.5 hours of Category 1 credit.

"Focus 84"
Respiratory Muscle Function and Physiology
March 8-10. Registry Resort, Scottsdale. Sponsor: St. Luke's Medical Center. Contact: Chris Campbell, Meeting Planner, St. Luke's Medical Center, 525 N. 18th Street. Phoenix, Arizona. Approved for hour per hour Category 1 credit.

Training in Structural Family Therapy
March 8-12. Arizona Family Learning and Communication Center. Sponsor: Philadelphia Child Guidance Clinica. Contact: Arizona Family Learning and Communication Center, Metro Medical Plaza B-403, 3201 West Peoria, Phoenix, Arizona 85029.

Tenth Annual Maricopa Medical Center Urological Seminar
March 17-18. The Cottonwoods, Scottsdale. Sponsor: Maricopa Medical Center. Contact: James H. McDonald, M.D., Chief of Urology Service, 2601 East Roosevelt, Street, Phoenix, Arizona 85008 or Wilfred M. Potter, M.D., Scottsdale Urology Associates, Ltd., 3604 Wells Fargo, Suite B, Scottsdale, Arizona 85251. Approved for 14 hours of Category 1 credit.

Clinical Seminar Series
What's New in the Approach to Anemia
March 17, 1984. University of Arizona Health Sciences Center. Sponsor: U. of A. College of Medicine. Contact: Office of Continuing Medical Education, U. of A. Health Sciences Center, Tucson, Arizona 85724.

Current Perspectives Seminar—Diabetes
March 21. ArMA Building, Phoenix. Sponsor: Arizona Medical Association. Contact: Nikki Mertz, Arizona Medical Association, 810 West Bethany Home Road, Phoenix, Arizona 85724. Approved for 3½ hours of Category 1 credit.

Gastroenterology of Clinicians 1984.
March 21-23. Scottsdale Hilton. Sponsor: University of Arizona College of Medicine and David C. H. Sun Memorial Institute. Contact: Jeanie Sun, 948-1064.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Humana Hospital, Phoenix, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix:
1st Tues.—Phoenix Children's Hospital.
2nd Tues.—Maricopa Medical Center.
3rd Tues.—Phoenix Children's Hospital.
4th Tues.—St. Joseph's Hospital.
Sponsor: Phoenix Hospitals Affiliated Pediatric Program. Contact Paul S. Bergeson, M.D., P.O. Box 2989, Phoenix, Arizona 85062. Approved for 1 hour per session Category 1 credit.

Review of Forensic Pathology
Current Case, Special Topics
Thursday, weekly, 11:00 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session Category 1 credit.

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ 85008. Contact: Martin B. Kassell, M.D.
Inservice Training
1st Friday, 1:00-2:00 p.m., Room 5, Education Building.
Psychiatric Case Presentation
2nd Friday, 1:00-2:00 p.m. Room 5, Education Building.
Clinical Pathological Conference
3rd Friday, 1:00-2:00 p.m., Room 5, Education Building
Open Topic
4th Friday, 1:00-2:00 p.m., Room 5, Education Building

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour Category 1 credit.
Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgical Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third and fifth, Eighth Floor Conference Room.
Neuro-Ophthalmology Conference
Mondays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8:00-9:00 a.m., First Floor Conf. Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9:00 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conf. Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9:00-11:00 a.m. in Eighth Floor Conference Rm.

34th ANNUAL COURSE FOR PHYSICIANS IN FAMILY PRACTICE

For the 34th consecutive year, Mount Zion Hospital and Medical Center presents this postgraduate course designed for physicians in family and general practice.
To be held at Mount Zion Hospital and Medical Center, San Francisco, on Wednesday through Friday, March 7-9, 1984.

Co-Chairmen: Rene Bine, Jr., M.D.
James A. Davis, M.D.
Tuition: $225/before February 1
$250/after February 1
Credit: 19 hours in Category I
For more information, contact:

Martin Schimerlik
Office of Continuing Education
Mount Zion Hospital & Medical Center
P.O. Box 7921
San Francisco, CA 94120
414/567-6600, ext. 2404

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Thunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
Last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.
Surgical Department CME
4th Friday, 7:00 a.m., Educ. Center Classrooms I & II. Contact: Brian Updegraff, M.D.

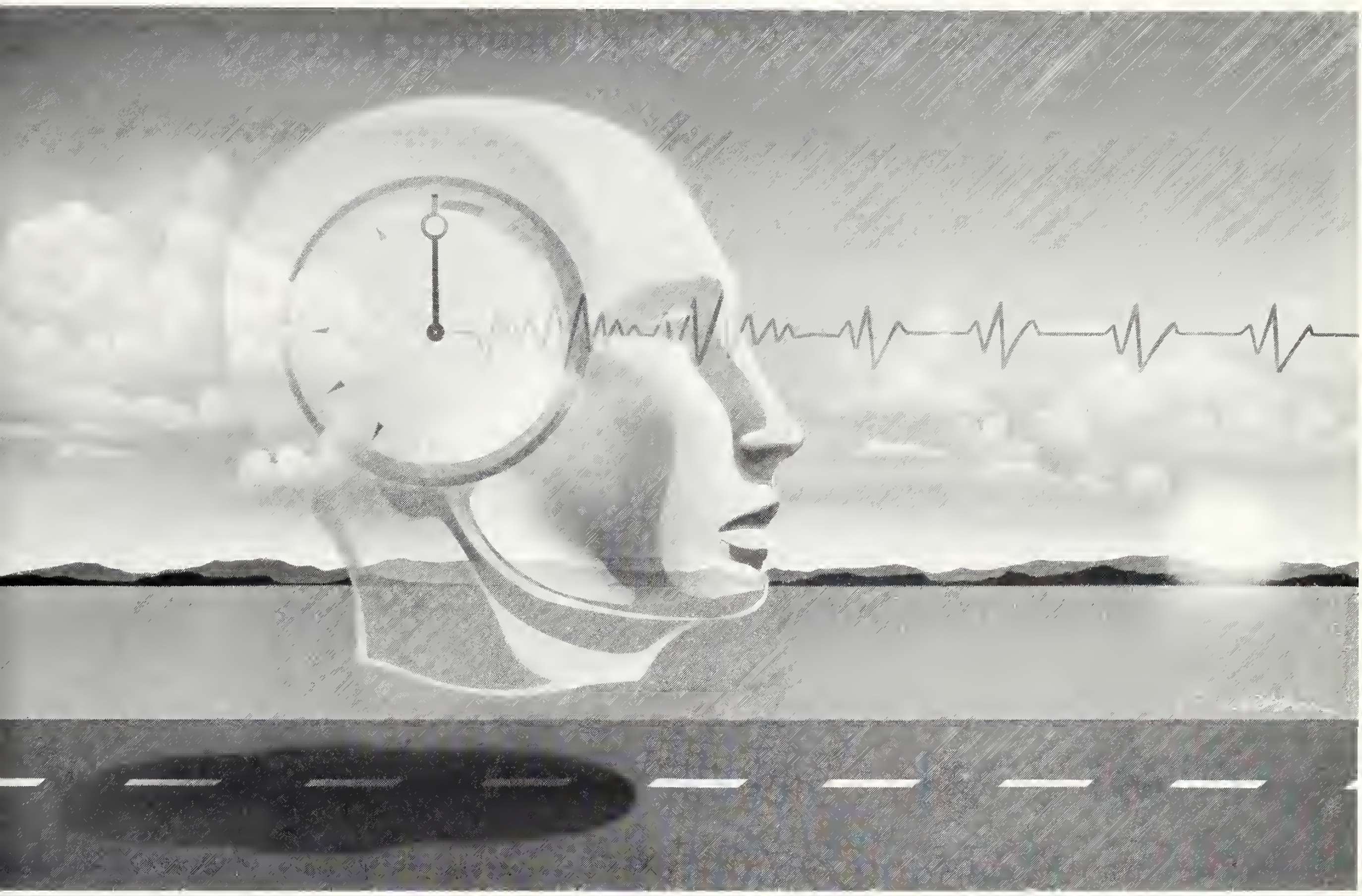
CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Howard Gray, M.D. and Robert Meyer, M.D. Approved for Category 1 credit.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona. Contact: William Selezinka, M.D. Approved for Category 1 credit.
CME Programs
Weekly, Tuesday, 7 p.m., Cafeteria-West End.

What you don't know about trauma could kill somebody.



Last year, more Americans were killed
by trauma than were killed in the entire Vietnam War.
The shame of it is, about half of those 100,000
lives could have been saved with proper treatment.
But it takes 45 life-saving decisions within just 30 minutes.
Do you know enough to make the right decisions?
If you'd like to sharpen your trauma skills, join us in Phoenix
for our third annual symposium, Trauma Care '84.

Please send me more information on Trauma Care '84, February 19-22.
NAME ____________ ORGANIZATION ____________
ADDRESS ________________________
CITY ____________ STATE ________ ZIP ______

MAIL TO: Trauma Care National Symposium John C. Lincoln Hospital & Health Center
9211 N. 2nd Street, Phoenix AZ 85020 OR CALL: (602) 943-2381 Ext. 1736

TRAUMACARE
1 9 8 4

Clinical Conference — Dept. of Medicine
Weekly, Thursday, 12:30-1:30 p.m. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 p.m. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 p.m., Grande 2.

HUMANA HOSPITAL PHOENIX

1747 East Thomas Road, Phoenix, Arizona 85016. Contact: Medical Staff Secretary for additional information.

Physicians Continuing Education Program
1st Thursday, 12:30 p.m., Classrooms.

EL DORADO HOSPITAL TUCSON (THMEP)

1400 N. Wilmot Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, (March, June, Sept. and Dec.) Contact: R. Grossman, M.D.

Surgical Department Meeting
3rd Monday, 11:45 p.m.

FLAGSTAFF HOSPITAL & MEDICAL CENTER OF NORTHERN ARIZONA

1215 N. Beaver Street, P.O. Box 1268, Flagstaff, AZ 86002. Contact: B. C. Hirschberg, M.D., CME Program Clinical Conference. Approved for Category 1 credit.

Interesting Case Conference
1st Tuesday, 12:30 p.m., Tollefson Rm.

Clinical Conferences
Weekly, Tuesdays, 12:30 p.m., Tollefson Rm.

Tumor Board Case Conference
3rd Tues., 12:30 p.m., Hospital Conf. Rm.

Mortality & Morbidity Conference
1st Thurs., 12:30 p.m., Hospital Conf. Rm.

GOOD SAMARITAN MEDICAL CENTER

1111 East McDowell Rd., Phoenix, AZ 85006. Approved for Category 1 credit.

Obstetrical Sectional Conference
1st Monday, 12:30-1:30 p.m., Conf. Rm. E.

Gynecological Section Conference
2nd Monday, 12:30-1:30 p.m., Conf. Rm. E.

Obstetrical Sectional Conference
5th Monday, 12:30-1:30 p.m., Conf. Rm. E.

Pulmonary Grand Rounds
Weekly, Monday, 12 noon- 1 p.m., Amphitheater.

Family Practice
Weekly, Monday, 12:00-1:00 p.m., Family Practice Center.

Pediatric Grand Rounds
1st & 3rd Tuesday, 7:30-8:30 a.m., Amphitheater.

Family Practice
Weekly, Tuesday, 12:00-1:00 p.m., Family Practice Center.

Cardiology Grand Rounds
Weekly, Tuesday, 12:00-1:00 p.m., Amphitheater.

Medical Noon Conference
1st, 2nd, 4th, & 5th Wednesday, 12:00-1:00 p.m., T-8 Conference Rm.

Clinical Cancer Forum
3rd Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Family Practice
Weekly, Wednesday, 12:00-1:00 p.m., Family Practice Center.

Tumor Conference
2nd, & 4th Wednesday, 12:00-1:00 p.m., Conf. Rms. E-F.

Surgical Grand Rounds
Weekly, Thursday, 7:00-8:30 a.m., Amphitheater.

Family Practice
Weekly, Thursday, 12:00-1:00 p.m., Family Practice Center.

Medical Noon Conference
Weekly, Thursday, 12:00-1:00 p.m., T-8 Conf. Rm.

Joint Tumor Gyn Conference
2nd Fri., 12:00-1:00 p.m., Conf. Rms. E-F.

Medicine Grand Rounds
Weekly, Friday, 8:00-9:00 a.m., Amphitheater.

Neurology Grand Rounds
Weekly, Friday, 12:00-1:00 p.m., Amphitheater.

Psychiatry Grand Rounds
Weekly, Friday, 11:00-12:00 noon, Conf. Rm. E.

KINO COMMUNITY HOSPITAL (THMEP)

2800 E. Ajo Way, Tucson, AZ 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Surgical Conference
Weekly, Monday 8:00 a.m., Contact: R. Fischer, M.D.

Medical Conference
Weekly, Monday, 12:30 p.m., Contact: Chief Medical Resident

OB/GYN Pathology Conference
Weekly, Thursday, 1:30 p.m., Contact: Jay Fleishman, M.D.

Psychiatry Journal Club
Weekly, Thursday, 12 Noon, Contact: Jose Santiago, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
2nd & 4th Wednesday, 12:30 p.m., Conference Rms.

Tumor Board
1st & 3rd Mondays, 12-1 p.m., Medical Conference Rms.

MARICOPA MEDICAL CENTER

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Anesthesiology Morbidity & Mortality Conference
Weekly, Mondays, 2:45 p.m.

Surgery Burn Grand Rounds
Weekly 7:30 a.m.

Medicine Chest
1st & 3rd Monday, 12 Noon.

Medicine GI
2nd & 4th Monday, 12 Noon.

Medicine Dermatology
5th Monday, 12 Noon.

Chest/Surgery
Weekly, Mondays, 1:30 p.m.

Ambulatory Pediatrics
Weekly, 2:45 p.m.

OB Problem Conference
Weekly, Tuesday, 7:30 a.m.

Orthopedic Conference
Weekly, Tuesday, 7:30 a.m., Santa Cruz Room.

Medicine Neurology
1st & 3rd Tuesday, 12 Noon.

Medicine Renal
2nd Tuesday, 12 Noon.

Emergency Medicine
4th Tuesday, 12 Noon.

OB/GYN—Tri-Hospital Perinatal Mortality
3rd Tuesday, 12 Noon.

OB/GYN—Departmental Grand Rounds
1st and 2nd Tuesday, 12 Noon.

GYN Endocrine Conference
4th Tuesday, 12 Noon.

Anesthesiology—General
Weekly, Tuesday, 2:45 p.m..

Review of GYN Pathology Slides
Weekly, Tuesday, 4:00 p.m.

Pediatric Grand Rounds
2nd Tuesday, 7:30 a.m.

Pathology Staff Inservice
Weekly, Wednesday, 6:45-7:50 a.m.

Anesthesiology Residents & CRNA's Conference
Weekly, Wednesday, 7:00 a.m.

OB/Neonatal Conference
Weekly, Wednesday, 7:30 a.m.

Surgery
Weekly, Wednesday, 7:00 a.m.

Surgery Hand Conference
Weekly, Wednesday, 7:30 a.m.

Psychiatry Staff
1st Wednesday, 11:00 a.m.

Psychiatry General Conference
2nd, 3rd, & 4th Wednesdays, 12 Noon.

Medicine Cardiology
1st Wednesday, 12 Noon.

Medicine Hematology
2nd Wednesday, 12 Noon. Contact: Neil Shernoff, M.D.

Medicine Mortality
3rd Wednesday, 12 Noon.

Medicine Infectious Disease or Hematology
4th Wednesday, 12 Noon.

Pediatrics Renal/Endo Conference
1st Wednesday, 12:30 p.m.

Pediatrics Infectious Disease
4th Wednesday, 12:30 p.m.

Anesthesiology Staff Lecture
1st, 2nd & 4th Wednesday, 2:30 p.m.

Surgery Morbidity & Mortality Conference
1st, 2nd & 4th Wednesday, 3:30 p.m..

Anes/Surgery Joint Traum Conference
3rd Wednesday, 3:30 p.m.

Surgery Urology Staff
3rd Thursday, 7 :30 a.m.

Anesthesiology Journal Club
4th Thursday, 8:00 a.m.

Ambulatory Pediatrics
Weekly, Thursday, 8:00 a.m.

Surgery Burn Chart Rounds
1st, 2nd, & 3rd Thursdays, 8:00 a.m.

Burn Mortality Conference
4th Thursday, 8:00 a.m.

Medicine Problem Case Conference
1st Thursday, 12 Noon.

Medicine Rheumatology
2nd Thursday, 12 Noon.

Medicine Staff & House (Separate)
4th Thursday, 12 Noon.

OB/GYN Resident Conference
1st, 2nd, & 3rd Thursday, 12 Noon.

Vascular Surgery Conference
1st, 2nd & 4th Thursday, 12:30 p.m.

Combined GI & Surgery Conference
3rd Thursday, 12:30 p.m.

Anesthesiology Chief Resident's Lecture
Weekly, Thursdays, 2:45 p.m.
Orthopedic Surgery Basic Sciences
Weekly, Thursdays, 5:30 p.m.
OB/Surgery Pathology
Weekly, Fridays, 7:30 a.m.
Orthopedic Surgery Fracture X-Ray Conference
Weekly, Fridays, 7:30 a.m.
Medicine Endocrinology
st Friday, 12 Noon.
Medicine Infectious Disease
2nd Friday, 12 Noon.
Medicine/Radiology Conference
3rd Friday, 12 Noon.
Medicine Cardiology
4th Friday, 12 Noon.
OB/GYN Tumor Board
4th Friday, 12 Noon.
Surgery Tumor Board
st, 2nd & 3rd Friday, 12 Noon.
GYN Endo Conference
st & 3rd Friday, 12:30 p.m.
Pediatric Radiology Conference
st & 2nd Friday, 12:30 p.m.
Pediatric Dermatology
3rd Friday, 12 :30 p.m.
Pediatric Infectious Disease
4th Friday, 12:30 p.m.
Surgery Rehab Rounds
Weekly, Friday, 1:30 p.m.
Surgery Selected Readings
2nd & 4th Saturdays, 8:00 a.m.

MESA LUTHERAN HOSPITAL

501 West 10th Place, Mesa, Arizona 85201.
Contact: E. John Wickman, M.D.
Continuing Medical Education Programs
Tuesdays, 6:30 p.m., Ocotillo Rm.

PHOENIX BAPTIST HOSPITAL & MEDICAL CENTER

5025 N. 20th Ave., Phoenix, AZ 85015.
Contact: J. Burr Ross, M.D., Approved for Category 1 credit.
Clinical Conferences
1st, 2nd & 3rd Tuesdays, 12 noon, 5th Floor Auditorium.
CPC or Medical-Surgical Forum
4th Tuesday, 12 noon, 5th Floor Auditorium.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016.
Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Clinical Staff Teaching Conference, Rm. A.
Weekly, Wednesday, 8:00-9:00 a.m.
Family Practice/Emergency Room Teaching Conference
Thursday, Weekly, 7:30-8:30 a.m., Conf. Rm. A, Contact: Drs. L. Fairbanks & E.Y. Hooper.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036.
Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 p.m., Kiva Conf. Rm.
Clinical Conferences
Weekly, Tuesday, 12:30 p.m., Kiva Conference Rm.
Psychiatric Clinical Conference
2nd Friday, 11:30 a.m., B-Wing Conf. Rm., Contact: Medical Staff Secretary.
Tumor Board Conference
Weekly, Friday, 12:00 p.m., Kiva Conf. Rm.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251.
Contact: W. S. Williams, M.D., Approved for Category 1 credit.
Family Practice Conference
1st Monday, 12:30 p.m., Doctors' Lounge.
Emergency Medical Services Conference
2nd Monday, 12:30 p.m., Doctors' Lounge.
Neurology/Neurosurgery Conference
3rd Monday, 12:30 p.m., Doctors' Lounge.
CPC Conference
4th Monday, 12:30 p.m., Doctors' Lounge.
Pediatrics Conference
5th Monday, 12:30 p.m., Doctors' Lounge.
Pulmonary Conference
1st Tuesday, 12:30 p.m., Doctors' Lounge.
Cardiology Conference
2nd Tuesday, 12:30 p.m., Doctors' Lounge.
Surgery Conference
3rd Tuesday, 12:30 p.m., Doctors' Lounge.
Resident Grand Rounds
4th Tuesday, 12:30 p.m., Doctors' Lounge.
Medical Subspecialties
5th Tuesday, 12:30 p.m., Doctors' Lounge.
Uronephrology Conference
3rd Thursday, 12:30 p.m., Doctors' Lounge.
Tumor Conference
4th Thursday, 12:30 p.m., Doctors' Lounge.
GI/Med/Surg/Radiology Conference
2nd Friday, 12:30 p.m., Doctors' Lounge.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 p.m., 1st Floor Conf. Rm.
Genetics Conference
Weekly, Monday, 12:30 p.m., Pediatric Department.
Pediatric Rounds
Weekly, Monday, Wed. & Friday, 10:30 a.m., Pediatric Department.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 a.m., Contact: J. Kipp Charlton, M.D.
ECG Conference
Weekly, Tuesday, 12:30 p.m., Pediatric Department.
Medical Grand Rounds
Weekly, Wednesday, 8:00 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 8:00 a.m., PIMC.
Visiting Professor Informal Presentation
Weekly, Thursday, 9:30 a.m., 1st Floor Conf. Room.
Visiting Professor Formal Presentation
Weekly, Thursday, 12:30 p.m., PIMC.
Nephrology Conference
Weekly, Fridays, 12:30 p.m., Pediatric Department.

ST. JOSEPH'S HOSPITAL TUCSON

350 N. Wilmot Road, Tucson, AZ 85711
Contact: Yvonne Clingerman, Medical Staff Office. Approved for Category 1 credit.
Current Concepts in Medicine
Weekly, Tuesday, 12 Noon, Auditorium
Surgery Department Conference
4th Monday, 12 Noon, Auditorium.
Hematology/Oncology Conference
Last Wednesday, 12 Noon, Contact: Nick Mansour, M.D.
Ophthalmology Case
2nd Tuesday, 7:30 a.m.
Ophthalmology Society
4th Tuesday, 6:00 p.m., Auditorium
Contact: Leonard Joffe, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ.
Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly, Monday, 12:15 p.m., Auditorium.
Chest Conference
4th Monday, 12:15 p.m., Phillips Auditorium.
Surgery Conference
1st Tuesday, 12:15 p.m., Auditorium.
Emergency Medicine Conference
1st Wednesday, 12:15 p.m., Auditorium.
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 p.m., Auditorium.
Pulmonary Case Conferences
1st Thursday, 7:30 a.m., Phillips Auditorium.
Psychiatry Conference
3rd Thursday, 7:00 a.m., Auditorium.
Combined Medical General Practice Conference
1st Friday, 12:15 p.m., Auditorium.
Toxicology Grand Rounds
2nd Friday, 7:30 a.m., Auditorium.
Ophthalmology Conference
1st Saturday, 8:30 a.m., Auditorium.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.
Monthly Specialty Conference — Dept. of Surgery
1st Monday, 7:30 a.m., Century Rm. A., Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday.
Emergency Medicine Lectures
Weekly, Thursday, 8:00 a.m., Century Rm. A.
Mental Health Update
1st Friday, 11:30-1:00 p.m., Century Rm. A
Cardiology Conference
Weekly, Friday, 8:00-9:00 a.m., Century Rm., Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
1st, 3rd, & 5th Mondays, 12 Noon, Contact: M. Maximov, M.D.

Dermatology Conference
4th Monday, 5:00 p.m., Contact: R. Miller, M.D.

Endocrinology Conference
4th Monday, 12 Noon, Contact: M. Parker, M.D.

Nephrology Conference
2nd Monday, 12 Noon, Contact: Stephen Seltzer.

Psychiatry Department Meeting
3rd Monday, 12 Noon, Contact: Howard Winkler, M.D.

Perinatal Conference
2nd Tuesday, 7:00 a.m.

Surgical Conference
2nd Tuesday, 7:15 a.m.

Hematology Conference
4th Tuesday, 12 Noon, Contact: Gerald Giordano, M.D.

Pulmonary/Infectious Disease Conference
Weekly except 4th, Tuesday, 12 Noon, Contact: B. Friedman, M.D.

Orthopedic Conference
1st Tuesday, 7:30 p.m., Contact: Jay Katz, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12:30 p.m., Contact: Dr. Lightner.

Neurophysiology Conference
2nd Tuesday, 5:00 p.m., Contact: Robert Foote, M.D.

Clinical Pathology Conference
Last Wednesday, 8:00 a.m., Contact: Dr. Fuchs.

Family Practice Meeting
2nd Wednesday, 12:30 p.m., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly, Wednesday, 8:00 a.m., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly, Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Neuroradiology Conference
Weekly, Thursday, 5:00 p.m., Contact: N. Komar, M.D.

Tumor Conference
Weekly, Thursday, 12 Noon, Contact: Cancer Committee.

GI Conference
Weekly, Friday, 12 Noon, Contact: Charles Sanner, M.D.

Interhospital Nuclear Medicine Conference
Weekly, Friday, 7:15 a.m., Contact: S.V. Hilts, M.D.

OB/GYN Conference
1st Friday, 7:30 a.m., Contact: Charles Parker, M.D.

OB/GYN Pathology Conference
3rd Friday, 7:30 a.m., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heilbrunn, M.D. Approved for Category 1 credit.

Medical/Surgical GI Conference
1st & 3rd Monday, 3:00 p.m., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Cancer Symposium
2nd Monday, 3:00-4:00 p.m., Rm T5, Contact: Dr. Byrne, Ext. 426.

Orthopedic Surgery Conference
2nd Monday, 7:30 a.m., Rm 3134, Contact: Dr. Russo.

Surgery - Pathology Conference
4th Monday, 4:00 p.m., Rm 3134, Contact: Dr. Mertz & Dr. Lanard.

GI Grand Rounds
Weekly, Tuesday, 1 p.m., Contact: Drs. Sanowski & Schaffner, after GI Grand Rounds, Rm. T-5.

GI Radiology Clinical Correlation Conference
1st and 3rd Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

GI Pathology Conference
2nd and 4th Tuesday, 12:00 noon, Rm. T-5, Contact: Dr. Sanowski.

Urology Histopathology Conference
Weekly Tuesdays, 8:00-9:00 a.m., Rm 2410, Contact: Drs. Haddad & Kivirand, Ext. 417.

Pulmonary X-ray Correlation Conference
Weekly Wednesdays., 12:30-1:30 p.m., Room 4115, Contact: Dr. Rohwedder, Ext. 388.

Cardiology Conference
2nd Thursday, 1:00 p.m., Room T-5, Contact: Dr. Habib.

Medical/Surgical Chest Conference
1st & 3rd Thursday, 12:30 p.m., Rm. 4115 Contact: Dr. Rohwedder.

Medical Service Grand Rounds
1st, 2nd, 3rd. & 5th, Fridays, 11:00 a.m., Rm. T-5, Contact: Dr. Zeller.

Medical Mortality Conference
4th Friday, 11:00 a.m., Room T-5, Contact: Dr. Zeller.

Urology Conference
Weekly Friday. 12:00-1:00 p.m., Room 3134, Contact: Dr. Haddad, Ext 418.

Vascular Conference
2nd Friday, 8:00-9:00 a.m., Rm. 3134, Contact: Dr. Cintora, Ext. 419.

PRESCOTT VETERANS ADMINISTRATION HOSPITAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for Category 1 credit.

Medical Rounds
1st & 3rd Thursdays, 10:00 a.m.-2:30 p.m.

Surgical Rounds
4th Thursday, 10:00 a.m.-2:30 p.m.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixtieth Ave., Tucson, AZ 85723. Contacts listed below. Approved for Category 1 credit.

Medical/Surgical Chest Conference
Weekly, Tuesday, 2:00 p.m., Contact: Dr. Young.

Medical Grand Rounds
Weekly, Wed., 12:00-1:00 p.m., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly, Wed., 4:00 p.m., Contact: Dr. Putnam.

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12:00-1:00 p.m., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11:00 a.m., Bldg. 107, Contact: J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Con
Weekly, Thursday, 12:00 noon.

Neurology Grand Rounds
Weekly, Friday, 12:00 p.m., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact: Alan Winfield, M.D. Approved for Categor 1 credit.

Radiology Conference
1st Tuesday, 7:00 a.m.

Operation Outreach
2nd Tuesday, 6:30 p.m.

Pathology Conference
4th Tuesday, 7:00 a.m.

Operation Outreach
2nd Wednesday, 7:00 a.m.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Robert M. Anderson, M.D., Dir. of CME. Contact: See below. Approved for Category 1 credit.

Anesthesiology Board Review Conferenc
2nd & 4th Monday, 4:00-5:00 p.m., AHSC Dining Rm. C&D, Contacts: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly, Thursday, 4:00-5:00 p.m., Room 5403.

Anesthesiology Case Discussion
Weekly, Wednesday, 7:00 a.m., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 p.m., AHSC Dining Room, C&D, Contacts: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12:00-1:00 p.m., HSC Auditorium, Contact: Cancer Center.

Cardiac Catheterization Conference
Weekly, Friday, 4:00 p.m., Contact: Dr. Temkin.

Cardiology Research Conference
Weekly, Tuesday, 7:30 a.m., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 p.m., AHSC, Contact: Dr. Byrne-Quinn.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1:00 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5:00-6:00 p.m., Weekly, Rm. 5505., Contact: Jerry Goldstone, M.D., Dept. of Surgery.

ermatology Conference
th Monday, 5:15 p.m., AHSC, Contact:
r. R. Friedman.
ermatology Rounds
Veekly, Wednesday, 11:30 a.m., Contact:
r. Lynch.
ar, Nose & Throat Conference
Veekly, Wednesday, 4:00 p.m., Contact:
r. S. Coulthard
ndocrinology Seminar
Veekly, Thursday, 12:00-1:00 p.m.,
ontact:
r. Johnson.
mergency Medicine Grand Rounds
uesdays, 9:00 a.m., AHSC, Contact:
r. Sanders.
I Pathology Conference
th Friday, 1:30 p.m., AHSC, Contact:
. Paplanus.
I Radiology Conference
nd & 4th Mondays, 7:30 a.m., AHSC,
ontact: Dr. T. Hunter.
ead & Neck Tumor Management
onference
Veekly, Wednesday, 4:00 p.m., Contact:
r. Murrell.
ematology-Oncology Clinical Conference
st & 5th Tuesdays, Noon-1:00 p.m., Rm.
505. Contact: S. Salmon, M.D., Dept. of
nternal Medicine.
edical Grand Rounds
Veekly, Wednesday, 12:00-1:00 p.m.,
HSC, Contact: Dr. J. Smith.
orbidity/Mortality in E.M.
nd Tuesday, 9:00 a.m., AHSC, Contacts:
rs. Hughes & Alcorn.
euromuscular Disease Conference
Veekly, Friday, 11:30 a.m., Contact:
r. Stern.
europathology Case Review
Veekly, Friday, 8:30 a.m., UAHSC,
r. P. Johnson.
euroradiology Conference
Veekly, Thursday, 5:00 p.m., Contact:
r. P. C. Christenson.
euromuscular Journal Conference
nd & 4th Thursday, 7:00-9:00 p.m.,
ontact: Dr. Stern.
eurosciences Seminar
Veekly, Tuesday & Friday, 7:30 a.m.,
HSC, Contact: Dr. C. Bamford.
uclear Medicine
Veekly, Thursday, 7:30 a.m., AHSC
adiology Conference Rm.
B/GYN Lectures
Veekly, Friday, 1:00 p.m., AHSC, Contact:
r. C. D. Christian.
phthalmology Grand Rounds
rd Friday, 7:30 a.m., AHSC, Contact:
r. J. Herschler.
phthalmology Retina Fluoro. Conference
Veekly, Thursday, 5 p.m., AHSC, Contact:
r. H. Cross.
rthopedic Rounds
aturday, 8:00 a.m., Contact: Dr. Peltier.
ain Conference
rd Monday, 4:00-5:00 p.m., AHSC Dining
m. C&D, Contact: Drs. Hameroff & Cork.
athology Conference
Veekly, Monday, 12 noon, AHSC, Contact:
r. C. D. Christian.
athology Seminar
Veekly, Friday, 4:30-5:30 p.m., AHSC,
m. 5120. Contact: Dr. P. Finley.
ucson Pathologist Conference
st Monday, 7:30 p.m., AHSC, Contact:
r. A. R. Graham.
Pediatric Grand Rounds
2nd, 4th & 5th Tuesdays, 12:00 p.m., AHSC,
Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly, Wednesday, 8:00 a.m., Contact:
Dr. Lillian Valdes-Cruz.
Pediatric Research Forum
Weekly, Tuesday, 7:30 a.m., Contact:
Dr. Otakar Koldovsky.
Pediatric Specialty Conference
Weekly, Friday, 8:00 a.m., Contact:
Dr. Marilyn Heines & Jane Ruggill.
Psychiatric Grand Rounds
Weekly, Wednesday, 5:30 p.m., AHSC,
Rm. 8403, 5th Floor Auditorium.
Psychiatric Monthly Case Conference
2nd Friday, 7:30 a.m., Contact: Dr. Alan
Levenson, Palo Verde Hospital.
Pulmonary Rounds
Weekly, Friday, 11:30 a.m., Contact:
Dr. Benjamin Burrows.
Chest Radiology
Weekly, Monday, 5:00-6:00 p.m., Rm.
1535F, UAHSC. Contact: Irwin M.
Freundlich, M.D., Dept. of Radiology.
Neuroradiology Teaching Conference
Weekly, Wednesday, 7:30 a.m., AHSC,
Contact: Dr. Christenson.
Radiation Oncology Planning Conference
Weekly, Friday, 8:30-10:00 a.m., AHSC,
Rm. 0655.
Radiology Interesting Case Conference
Weekly, Thursday, 12:00 noon, AHSC,
Contact: Dr. Freundlich.
Radiology-Rheumatology Conference
Weekly, Thursday, 7:45 a.m., UAHSC,
Library Rm.1535C.
Renal Pathology Conference
1st, 3rd, & 5th Thursday., 11:30 a.m.,
Contact: Dr. Nagle.
Residents Noon Conference
Weekly,Tuesday & Thursday, 12:00 noon,
AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Weekly, Wednesday, 5:00-6:00 p.m., Diag.
Radiology Conf. Rm.
Surgical Grand Rounds
Saturdays, 9:00 a.m., Rm. 5403, AHSC,
Contact: Dr. Wangensteen.
Surgical Morbidity & Mortality Conference
Weekly, Wednesday, 8:00 a.m., Contact:
Dr. Wangensteen.
Trauma Conference
Thursday, 4:00-5:00 p.m.. AHSC, Rm. 5505.
Toxicology Conference
Weekly, Tuesday, 8:00 a.m., Contact:
Dr. Keith Likes.
Tucson Ultrasonography Group
Weekly, Wednesday, 4:30 p.m., AHSC,
Contact: Dr. I. Freundlich.
General Urology Conference
Weekly, Tuesday & Thursday, 12:00 noon,
AHSC & VA Hospital Contact: Dr. G.W.
Drach.
Vascular Surgery Conference
Weekly, Tuesday, 4:00-6:00 p.m., AHSC,
Contact: Dr. J. Goldstone.

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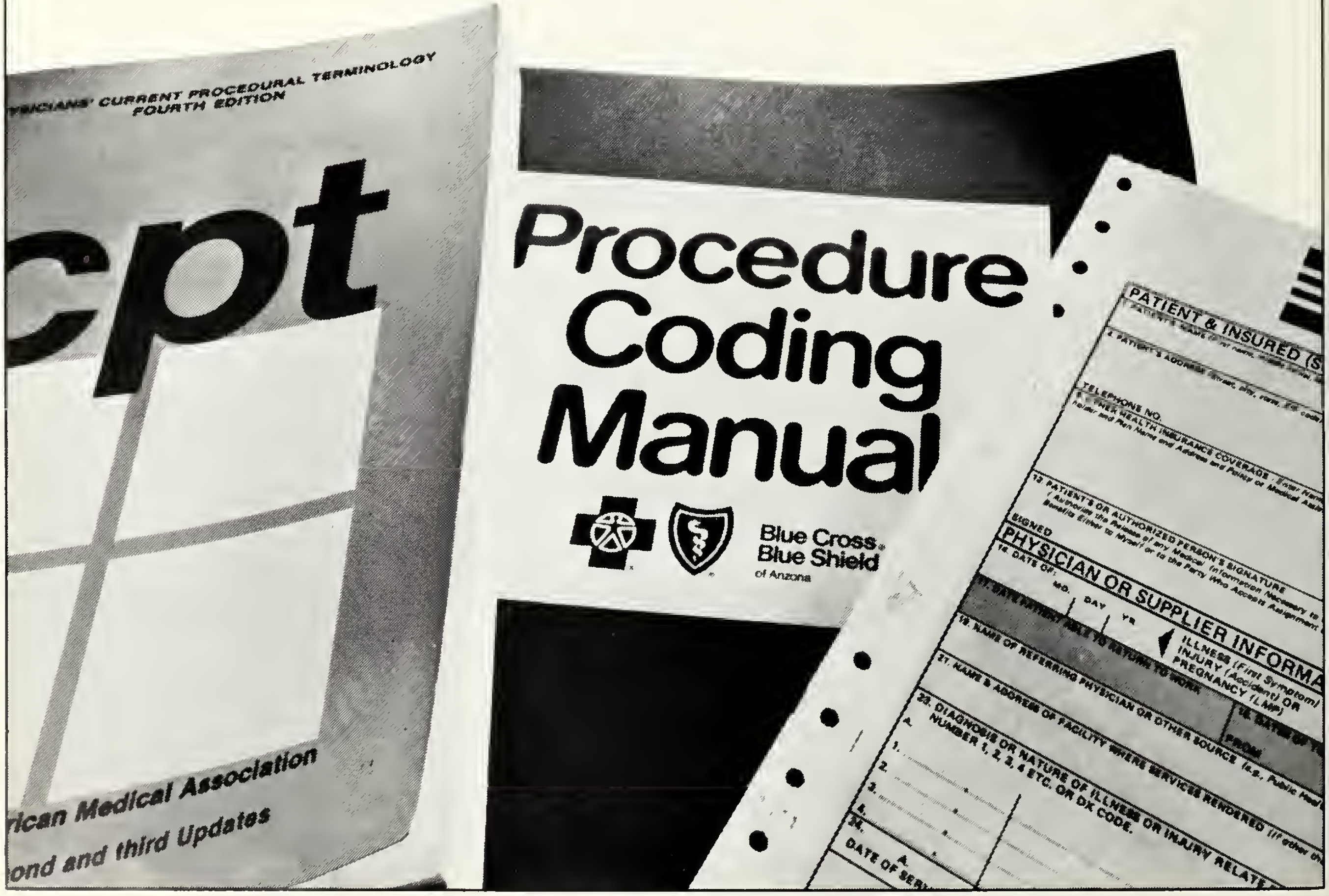

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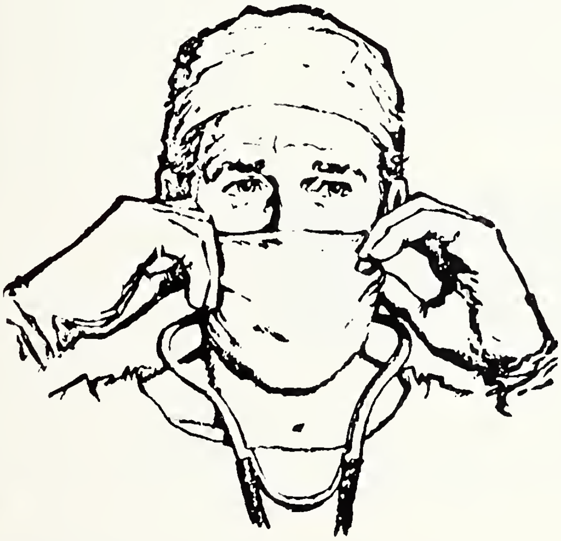

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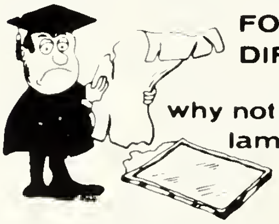

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